海洋Marine微波遥感载荷辐射定标与产品真实性检验各载荷输入输出定义和说明

# 1       各载荷方法运行输入输出接口定义

## 1.1    1米CSAR

### 1.1.1  1米C-SAR定标匹配算法

#### 1.1.1.11米C-SAR定标匹配算法（角反射器定标）

##### 1.1.1.1.1输入CS1\_CSAR\_L2-CR

表 1‑1定标匹配算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "matchType": " CS1\_CSAR\_L1A-CR",#需匹配的数据源，各载荷各自确定    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "auxFile": [#角反射器数据（见下表）      "/data/cr.xml",    ],    "resultFolder": "/home/eric/untitled2/data/out/",    "primaryFile": "/home/eric/untitled2/data/ CS1\_MDJ\_QPSI\_999967\_E34.9\_S48.9\_20190101\_L1A\_AHV\_L11020125310"  } |

**角反射器数据文件**

|  |
| --- |
| *<?*xml version="1.0" encoding="UTF-8" standalone="yes" *?>*  <product>      <cornerParams num="3">          <corner>              <cornerCode>1</cornerCode>              <longitude>107.894886646614</longitude>              <latitude>39.6284069582759</latitude>              <rcs>37.081</rcs>              <matrixS>                  <HH>0</HH>                  <HV>0</HV>                  <VH>1</VH>                  <VV>0</VV>              </matrixS>          </corner>          <corner>              <cornerCode>2</cornerCode>              <longitude>107.89269449209</longitude>              <latitude>39.6324808688295</latitude>              <rcs>39.041</rcs>              <matrixS>                  <HH>0</HH>                  <HV>1</HV>                  <VH>0</VH>                  <VV>0</VV>              </matrixS>          </corner>          <corner>              <cornerCode>3</cornerCode>              <longitude>107.894709393189</longitude>              <latitude>39.6228957044283</latitude>              <rcs>39.031</rcs>              <matrixS>                  <HH>-1</HH>                  <HV>-1</HV>                  <VH>1</VH>                  <VV>1</VV>              </matrixS>          </corner>          <corner>              <cornerCode>4</cornerCode>              <longitude>107.887849105086</longitude>              <latitude>39.6319000276196</latitude>              <rcs>10.729</rcs>              <matrixS>                  <HH>1</HH>                  <HV>0</HV>                  <VH>0</VH>                  <VV>1</VV>              </matrixS>          </corner>      </cornerParams>  </product> |

表 1‑2 1米C-SAR定标匹配算法（角反射器辐射定标）matchType组合列表

|  |  |  |
| --- | --- | --- |
| matchType组合 | 说明 | 有无auxFile |
| **CS1\_CSAR\_L1A-CR** | **L1A图像与角反射器匹配；**  **用于1米CSAR角反射器辐射定标、极化定标、辐射检验、极化检验** | **无** |

##### 1.1.1.1.2输出

表 1‑3匹配算法输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 匹配数据集实体文件 | H5 |
| 2 | 结果信息文件 | xxx.json |
| 3 | 日志文件 | xxx.log |
| 4 | 工作流文件 | xxxFlow.json |

表 1‑4 CS1\_CSAR\_L1A-CR0匹配数据集实体文件内容列表

|  |  |  |
| --- | --- | --- |
| 匹配数据集内容序号 | 匹配数据集内容名称 | 维度 |
| 1 | 角反射器纬度Cornerlat | 1D |
| 2 | 角反射器经度Cornerlon | 1D |
| 3 | 角反射器个数CornerNum | 1D |
| 4 | 角反射器的RCS（参考后向散射系数）Corner\_RCS | 2D |
| 5 | SAR图像提取的RCS（原始后向散射系数）Measure\_RCS | 2D |
| 6 | SAR图像的原始定标常数CalibrationConst\_Pre | 1D |
| 7 | 1mCSAR的成像模式ImagingMode | 1D |
| 8 | 1mCSAR的波位号WaveCode | 1D |
| 9 | 1mCSAR的极化方式PolarMode | 1D |

表 1‑5 CS1\_CSAR\_L1A-CR4匹配数据集实体文件内容列表

|  |  |  |
| --- | --- | --- |
| 匹配数据集内容序号 | 匹配数据集内容名称 | 维度 |
| 1 | 角反射器纬度Cornerlat | 1D |
| 2 | 角反射器经度Cornerlon | 1D |
| 3 | 角反射器个数CornerNum | 1D |
| 4 | 不同角反射器L1A散射系数实部Measure\_S\_real | 2D |
| 5 | 不同角反射器L1A散射系数虚部Measure\_S\_imag | 2D |
| 8 | 不同角反射器参考的HH散射系数Coner\_HH | 1D |
| 9 | 不同角反射器参考的HV散射系数Coner\_HV | 1D |
| 10 | 不同角反射器参考的VH散射系数Coner\_VH | 1D |
| 11 | 不同角反射器参考的VV散射系数Coner\_VV | 1D |
| 12 | 角反射器的RCS Corner\_RCS | 2D |
|  | SAR图像的原始定标常数CalibrationConst\_Pre | 1D |
| 13 | 1mCSAR的成像模式ImagingMode | 1D |
| 14 | 1mCSAR的波位号WaveCode | 1D |
| 15 | 1mCSAR的极化方式PolarMode | 1D |

表 1‑6 CS1\_CSAR\_L1A-CR3匹配数据集内容列表

|  |  |  |
| --- | --- | --- |
| 匹配数据集内容序号 | 匹配数据集内容名称 | 维度 |
| 1 | 角反射器纬度Cornerlat | 1D |
| 2 | 角反射器经度Cornerlon | 1D |
| 3 | 角反射器个数CornerNum | 1D |
| 4 | 不同角反射器L1A散射系数实部Measure\_S\_real | 2D |
| 5 | 不同角反射器L1A散射系数虚部Measure\_S\_imag | 2D |
| 8 | 不同角反射器参考的HH散射系数Coner\_HH | 1D |
| 9 | 不同角反射器参考的HV散射系数Coner\_HV | 1D |
| 10 | 不同角反射器参考的VH散射系数Coner\_VH | 1D |
| 11 | 不同角反射器参考的VV散射系数Coner\_VV | 1D |
| 12 | 角反射器的RCS Corner\_RCS | 2D |
|  | SAR图像的原始定标常数CalibrationConst\_Pre | 1D |
| 13 | 1mCSAR的成像模式ImagingMode | 1D |
| 14 | 1mCSAR的波位号WaveCode | 1D |
| 15 | 1mCSAR的极化方式PolarMode | 1D |

表 1‑7结果信息文件 [结果信息 .json样例： （ 黄底 为必须项 ）]

|  |
| --- |
| {          "satId" : "CS1",          "sensorId" : "CSAR",          "status" : "0",          "task\_type" : "MCS"          "algo\_name" : "CS1\_CSAR\_L1A\_CR\_MDS",          "algo\_version" : "v01",          "message" : "SUCCESS",          "organization" : "ht",          "programmer" : "李峻州",          "responsibler" : "邢树果",          "result" :          [                   {                           "filePath" : "/root/Desktop/Ocean\_Target\_CalibrationConst/outpath/ CS1\_CSAR\_L1A\_CR0\_ImagingMode\_WaveCode\_PolarMode\_20160919T105321\_20160919T105325\_20211119T93059.h5",                           "meta" :                           {                                    "aux" : "/root/Desktop/Ocean\_Target\_CalibrationConst/CalibrationConst-PolCalibration/4028fa817cea5968017d323df6e301c1\_cornerParams.xml",                                    "endTime" : "20160919T105325",                                    "extent" : "POLYGON ((107.887847900390625 39.622894287109375 0,107.887847900390625 39.632480621337891 0,107.894889831542969 39.632480621337891 0,107.894889831542969 39.622894287109375 0,107.887847900390625 39.622894287109375 0))",                                    "main" : "/root/Desktop/Ocean\_Target\_CalibrationConst/CalibrationConst-PolCalibration/GF3\_MYN\_QPSI\_000584\_E107.9\_N39.7\_20160919\_L1A\_AHV\_L10003269459/",                                    "parameter" : "",                                    "productionTime" : "20211119T9310",                                    "size" : 4,                                    "startTime" : "20160919T105321"  "ImagingMode": QPSI,   "WaveCode": 213,    "PolarMode": AHV,                           },                           "typeid" : "CS1\_CSAR\_L1A-CR0"                   },                   {                           "filePath" : "/root/Desktop/Ocean\_Target\_CalibrationConst/outpath/ CS1\_CSAR\_L1A\_CR0\_ImagingMode\_WaveCode\_PolarMode\_20160919T105321\_20160919T105325\_20211119T93059.h5  ",                           "meta" :                           {                                    "aux" : "/root/Desktop/Ocean\_Target\_CalibrationConst/CalibrationConst-PolCalibration/4028fa817cea5968017d323df6e301c1\_cornerParams.xml",                                    "endTime" : "20160919T105325",                                    "extent" : "POLYGON ((107.892692565917969 39.622894287109375 0,107.892692565917969 39.632480621337891 0,107.894889831542969 39.632480621337891 0,107.894889831542969 39.622894287109375 0,107.892692565917969 39.622894287109375 0))",                                    "main" : "/root/Desktop/Ocean\_Target\_CalibrationConst/CalibrationConst-PolCalibration/GF3\_MYN\_QPSI\_000584\_E107.9\_N39.7\_20160919\_L1A\_AHV\_L10003269459/",                                    "parameter" : "",                                    "productionTime" : "20211119T93124result.MatchNum",                                    "size" : 3,                                    "startTime" : "20160919T105321"  "ImagingMode": QPSI,   "WaveCode": 213,  "PolarMode": AHV,                             },                           "typeid" : "CS1\_CSAR\_L1A-CR4"                   }                   {                           "filePath" : "/root/Desktop/Ocean\_Target\_CalibrationConst/outpath/ CS1\_CSAR\_L1A\_CR3\_ImagingMode\_WaveCode\_PolarMode\_20160919T105321\_20160919T105325\_20211119T93059.h5",                           "meta" :                           {                                    "aux" : "/root/Desktop/Ocean\_Target\_CalibrationConst/CalibrationConst-PolCalibration/4028fa817cea5968017d323df6e301c1\_cornerParams.xml",                                    "endTime" : "20160919T105325",                                    "extent" : "POLYGON ((107.892692565917969 39.622894287109375 0,107.892692565917969 39.632480621337891 0,107.894889831542969 39.632480621337891 0,107.894889831542969 39.622894287109375 0,107.892692565917969 39.622894287109375 0))",                                    "main" : "/root/Desktop/Ocean\_Target\_CalibrationConst/CalibrationConst-PolCalibration/GF3\_MYN\_QPSI\_000584\_E107.9\_N39.7\_20160919\_L1A\_AHV\_L10003269459/",                                    "parameter" : "",                                    "productionTime" : "20211119T93124",                                    "size" : 3,                                    "startTime" : "20160919T105321"，  "ImagingMode": QPSI,  "WaveCode": 213,  "PolarMode": AHV,                             },                           "typeid" : "CS1\_CSAR\_L1A-CR3"                   }          ],  } |

表 1‑8 工作流文件（可删减，stepNo需按从1递增的顺序）

|  |
| --- |
| {     "product" : "CS1\_CSAR\_L1A-CR",     "step" : [        {           "log" : "read config file success.",           "status" : "0",           "stepName" : "读取工作单",           "stepNo" : "1",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input file success.",           "status" : "0",           "stepName" : "读取配置文件",           "stepNo" : "2",           "timeStamp" : "20211021T074109"        },        {           "log" : "analyse input file.",           "status" : "0",           "stepName" : "解析工作单",           "stepNo" : "3",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input data file success.",           "status" : "0",           "stepName" : "读取卫星数据",           "stepNo" : "4",           "timeStamp" : "20211021T074109"        },        {           "log" : "",           "status" : "0",           "stepName" : "数据处理",           "stepNo" : "5",           "timeStamp" : ""        },        {           "log" : "",           "status" : "0",           "stepName" : "匹配数据输出",           "stepNo" : "6",           "timeStamp" : ""        }     ]  } |

#### 1.1.1.21米C-SAR定标匹配算法（ECMWF辐射定标）

##### 1.1.1.2.1输入

表 1‑9定标匹配算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "matchType": " **CS1\_CSAR\_L1A-ECMWF\_GRIB\_N1D** ",#需匹配的数据源，各载荷各自确定    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "auxFile": [      "/home/eric/untitled2/data/N1D09100000091000001",      "/home/eric/untitled2/data/N1D09100000091030001",      "/home/eric/untitled2/data/N1D09100000091006001",      "/home/eric/untitled2/data/N1D09100000091009001",      "/home/eric/untitled2/data/N1D09101200091012001",      "/home/eric/untitled2/data/N1D09101200091015001",      "/home/eric/untitled2/data/N1D09101200091018001",      "/home/eric/untitled2/data/N1D09101200091021001",      "/home/eric/untitled2/data/N1D09110000091100001"    ],    "resultFolder": "/home/eric/untitled2/data/out/",    "primaryFile": "/home/eric/untitled2/data/ CS1\_MDJ\_QPSI\_999967\_E34.9\_S48.9\_20190101\_L1A\_AHV\_L11020125310"  } |

表 1‑10 1米C-SAR定标匹配算法（ECMWF辐射定标）matchType组合列表

|  |  |  |
| --- | --- | --- |
| matchType组合 | 说明 | 有无auxFile |
| **CS1\_CSAR\_L1A-ECMWF\_GRIB\_N1D** | **L1A图像与ECMWF匹配；**  **用于1米CSAR海洋目标法辐射定标** | **有** |

##### 1.1.1.2.2输出

表 1‑11匹配算法输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 匹配数据集实体文件 | H5 |
| 2 | 结果信息文件 | xxx.json |
| 3 | 日志文件 | xxx.log |
| 4 | 工作流文件 | xxxFlow.json |

表 1‑12匹配数据集实体文件内容列表

|  |  |  |
| --- | --- | --- |
| 匹配数据集内容序号 | 匹配数据集内容名称 | 维度 |
| 1 | 纬度Latitude | 2D |
| 2 | 经度Longitude | 2D |
| 3 | ECMWF计算得到的HH后向散射系数 Model\_NRCS\_HH | 2D |
| 4 | ECMWF计算得到的HV后向散射系数 Model\_NRCS\_HV | 2D |
| 5 | ECMWF计算得到的VH后向散射系数 Model\_NRCS\_VH | 2D |
| 6 | ECMWF计算得到的VV后向散射系数 Model\_NRCS\_VV | 2D |
| 7 | L1A图像计算得到的HH后向散射系数 SAR\_NRCS\_HH | 2D |
| 8 | L1A图像计算得到的HV后向散射系数 SAR\_NRCS\_HV | 2D |
| 9 | L1A图像计算得到的VH后向散射系数 SAR\_NRCS\_VH | 2D |
| 10 | L1A图像计算得到的VV后向散射系数 SAR\_NRCS\_VV | 2D |
| 11 | 1mCSAR的成像模式ImagingMode | 1D |
| 12 | 1mCSAR的波位号WaveCode | 1D |
| 13 | 1mCSAR的极化方式PolarMode | 1D |

表 1‑13结果信息文件 [结果信息 .json样例： （ 黄底 为必须项 ）]

|  |
| --- |
| {          "satId" : "CS1",          "sensorId" : "CSAR",          "status" : "0",          "task\_typ" : "MCS"          "algo\_name" : "CS1\_CSAR\_L1A\_ECMWF\_GRIB\_N1D\_MDS",          "algo\_version" : "v01",          "message" : "SUCCESS",          "organization" : "ht",          "programmer" : "李峻州",          "responsibler" : "邢树果",     "result" : [              {                           "filePath" : "/root/Desktop/Ocean\_Target\_CalibrationConst/outpath/ CS1\_CSAR\_L1A-ECMWF\_GRIB\_N1D \_20160919T105321\_20160919T105325\_20211119T93059.h5",                           "meta" :                           {                                    "aux" : "/root/Desktop/Ocean\_Target\_CalibrationConst/CalibrationConst-PolCalibration/4028fa817cea5968017d323df6e301c1\_cornerParams.xml",                                    "endTime" : "20160919T105325",                                    "extent" : "POLYGON ((107.887847900390625 39.622894287109375 0,107.887847900390625 39.632480621337891 0,107.894889831542969 39.632480621337891 0,107.894889831542969 39.622894287109375 0,107.887847900390625 39.622894287109375 0))",                                    "main" : "/root/Desktop/Ocean\_Target\_CalibrationConst/CalibrationConst-PolCalibration/GF3\_MYN\_QPSI\_000584\_E107.9\_N39.7\_20160919\_L1A\_AHV\_L10003269459/",                                    "parameter" : "",                                    "productionTime" : "20211119T9310",                                    "size" : 3000,                                    "startTime" : "20160919T105321"，  "ImagingMode": QPSI,  "WaveCode": 213,   "PolarMode": AHV,                             },                           "typeid" : "CS1\_CSAR\_L1A-ECMWF\_GRIB\_N1D"                   },     ]  } |

表 1‑14 工作流文件（可删减，stepNo需按从1递增的顺序）

|  |
| --- |
| {     "product" : "MCS\_HY-2E\_SMR-DPS",     "step" : [        {           "log" : "read config file success.",           "status" : "0",           "stepName" : "读取工作单",           "stepNo" : "1",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input file success.",           "status" : "0",           "stepName" : "读取配置文件",           "stepNo" : "2",           "timeStamp" : "20211021T074109"        },        {           "log" : "analyse input file.",           "status" : "0",           "stepName" : "解析工作单",           "stepNo" : "3",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input data file success.",           "status" : "0",           "stepName" : "读取卫星数据",           "stepNo" : "4",           "timeStamp" : "20211021T074109"        },        {           "log" : "",           "status" : "255",           "stepName" : "数据处理",           "stepNo" : "5",           "timeStamp" : ""        },        {           "log" : "",           "status" : "255",           "stepName" : "匹配数据输出",           "stepNo" : "6",           "timeStamp" : ""        }     ]  } |

#### 1.1.1.31米C-SAR定标匹配算法（亚马逊雨林天线方向图）

##### 1.1.1.3.1输入

表 1‑15定标匹配算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "matchType": " **CS1\_CSAR\_L1A-AMAZON**",#需匹配的数据源，各载荷各自确定    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "auxFile": [      "/data/amazon\_region.json",#亚马逊雨林区域信息数据（格式见下表）     ],    "resultFolder": "/home/eric/untitled2/data/out/",    "primaryFile": "/home/eric/untitled2/data/ H2E\_OPER\_SMR\_L2B\_SF\_20210910T220723\_20210910T235346\_01466"  } |

亚马逊雨林区域数据

|  |
| --- |
| {    "regions": [      "POLYGON ((-68.471545 -6.617092, -68.446272 -7.893549, -66.886225 -7.884001, -66.887274 -7.40758, -66.562979 -7.397836, -66.55736 -6.103395, -67.922924 -6.096117, -67.923008 -6.608517, -68.471545 -6.617092))",      "POLYGON ((-64.11111 -5.63333, -64.11111 -3.83528, -66.26111 -3.83528, -66.26111 -5.63333, -64.11111 -5.63333))",      "POLYGON ((-71.19 -4.97639, -74 -4.97639, -74 -7.24694, -71.19 -7.24694, -71.19 -4.97639))",      "POLYGON ((-62.805 -1.10972, -64.91667 -1.10972, -64.91667 -2.55111, -63.96667 -2.55111, -63.96667 -3.20528, -62.00917 -3.20528, -62.00917 -1.55, -62.805 -1.55, -62.805 -1.10972))",      "POLYGON ((-70.20889 -4.3625, -70.20444 -6.37778, -68.27833 -6.38444, -68.27833 -4.3625, -70.20889 -4.3625))",      "POLYGON ((-66.354841 -6.309362, -68.210675 -5.887465, -70.06242 -5.459811, -71.006079 -9.427568, -69.13947 -9.867312, -67.265718 -10.297335, -66.354841 -6.309362))",      "POLYGON ((-66.091071 -5.129486, -67.947707 -4.708999, -69.800847 -4.283959, -71.258785 -10.416337, -69.383162 -10.860051, -67.499811 -11.292944, -66.091071 -5.129486))",      "POLYGON ((-73.398469 -5.307171, -73.67394 -6.694532, -71.175381 -7.215526, -70.897542 -5.813336, -73.398469 -5.307171))"    ],    "sensor": "CSAR",    "bussiness": "1米CSAR亚马逊雨林辐射定标与天线方向图定标"  } |

表 1‑16 1米C-SAR定标匹配算法（亚马逊雨林辐射定标）matchType组合列表

|  |  |  |
| --- | --- | --- |
| matchType组合 | 说明 | 有无auxFile |
| **CS1\_CSAR\_L1A\_AMAZON** | **L1A图像与亚马逊雨林匹配；**  **用于1米CSAR亚马逊雨林辐射定标、天线方向图计算** | **无** |

##### 1.1.1.3.2输出

表 1‑17匹配算法输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 匹配数据集实体文件 | H5 |
| 2 | 结果信息文件 | xxx.json |
| 3 | 日志文件 | xxx.log |
| 4 | 工作流文件 | xxxFlow.json |

表 1‑18匹配数据集实体文件内容列表

|  |  |  |
| --- | --- | --- |
| 匹配数据集内容序号 | 匹配数据集内容名称 | 维度 |
| 1 | L1A图像计算得到的后向散射系数(HH) SAR\_NRCS\_HH | 2D |
| 2 | L1A图像计算得到的后向散射系数(HV) SAR\_NRCS\_HV | 2D |
| 3 | L1A图像计算得到的后向散射系数(VV) SAR\_NRCS\_VH | 2D |
| 4 | L1A图像计算得到的后向散射系数(VH) SAR\_NRCS\_VV | 2D |
| 5 | 亚马逊雨林后向散射系数 Amazon\_NRCS | 1D |
| 5 | 入射角数据Incidence\_theta | 1D |
| 6 | 1mCSAR的成像模式ImagingMode | 1D |
| 7 | 1mCSAR的波位号WaveCode | 1D |
| 8 | 1mCSAR的极化方式PolarMode | 1D |

表 1‑19结果信息文件 [结果信息 .json样例： （ 黄底 为必须项 ）]

|  |
| --- |
| {  "satId": "CS1",     "sensorId": "CSAR",  "status" : 0,     "task\_type" : "MCS",     "algo\_name" : "MCS\_CSAR\_AMAZON\_V01",     "algo\_version" : "V01",     "message" : "SUCCESS",     "organization" : "ht",     "programmer" : "李俊洲",     "responsibler" : "邢树果",     "result" : [        {          "filePath" : "/home/eric/untitled2/data/out/MDS\_CS1\_CSAR\_L1A\_AMAZON\_ 20200105T001102\_20200106T000415\_20060102T150405.h5",           "meta" : {              "aux" : "/home/eric/untitled2/data/GMIL2DATA/\*; ",              "endTime" : "20210910T235300",              "extent" : "POLYGON ((-179.993576049805 -66.6427536010742 0,-179.993576049805 74.0139312744141 0,179.491775512695 74.0139312744141 0,179.491775512695 -66.6427536010742 0,-179.993576049805 -66.6427536010742 0))",              "main" : "/home/eric/untitled2/data/H2E\_OPER\_SMR\_L2A\_TB\_20210910T220723\_20210910T235346\_01466\_dps\_250\_22\_owv.h5",              "productionTime" : "20210922T064036",              "size" : 56761,              "startTime" : "20210910T235346"，  "ImagingMode": QPSI,  "WaveCode": 213,  "PolarMode": AHV,             },           "typeid" : " CS1\_CSAR\_L1A-AMAZON"        }     ]  } |

表 1‑20 工作流文件（可删减，stepNo需按从1递增的顺序）

|  |
| --- |
| {     "product" : "MCS\_HY-2E\_SMR-DPS",     "step" : [        {           "log" : "read config file success.",           "status" : "0",           "stepName" : "读取工作单",           "stepNo" : "1",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input file success.",           "status" : "0",           "stepName" : "读取配置文件",           "stepNo" : "2",           "timeStamp" : "20211021T074109"        },        {           "log" : "analyse input file.",           "status" : "0",           "stepName" : "解析工作单",           "stepNo" : "3",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input data file success.",           "status" : "0",           "stepName" : "读取卫星数据",           "stepNo" : "4",           "timeStamp" : "20211021T074109"        },        {           "log" : "",           "status" : "255",           "stepName" : "数据处理",           "stepNo" : "5",           "timeStamp" : ""        },        {           "log" : "",           "status" : "255",           "stepName" : "匹配数据输出",           "stepNo" : "6",           "timeStamp" : ""        }     ]  } |

### 1.1.2  1米C-SAR检验匹配算法

#### 1.1.2.11米C-SAR图像检验匹配（角反射器几何检验）

##### 1.1.2.1.1输入

表 1‑21检验匹配算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "matchType": " **CS1\_CSAR\_L2-CR**",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "auxFile": [#角反射器数据（见下表）      "/data/cr.xml",    ],    "resultFolder": "/home/eric/untitled2/data/out/",    "primaryFile": "/home/eric/untitled2/data/CS1\_MDJ\_SS\_999967\_E24.6\_S72.7\_20190101\_L2\_VHVV\_L21020785842"  } |

表 1‑22 1米C-SAR卫星检验matchType组合列表

|  |  |  |
| --- | --- | --- |
| matchType组合 | 说明 | 有无auxFile |
| **CS1\_CSAR\_L2\_CS1\_CR** | **L2图像与角反射器匹配；**  **用于1米CSAR角反射器几何检验** | **无** |

##### 1.1.2.1.2输出

表 1‑231米C-SAR卫星检验成果列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 匹配数据集 | H5 |
| 2 | 结果信息文件 | xxx.json |
| 3 | 日志文件 | xxx.log |
| 4 | 工作流文件 | xxxFlow.json |

表 1‑24匹配数据集内容列表

|  |  |  |
| --- | --- | --- |
| 匹配数据集内容序号 | 匹配数据集内容名称 | 维度 |
| 1 | 角反射器纬度Cornerlat | 1D |
| 2 | 角反射器经度Cornerlon | 1D |
| 3 | 角反射器个数CornerNum | 1D |
| 4 | 真实的角反射器纬度Real\_lat | 2D |
| 5 | 真实的角反射器经度Real\_lon | 2D |
| 6 | L2图像中提取的角反射器纬度Measure\_lat | 2D |
| 7 | L2图像中提取的角反射器经度Measure\_lon | 2D |
| 8 | 1mCSAR的成像模式ImagingMode | 1D |
| 9 | 1mCSAR的波位号WaveCode | 1D |
| 10 | 1mCSAR的极化方式PolarMode | 1D |

表 1‑25结果信息文件 [结果信息 .json样例： （ 黄底 为必须项 ）]

|  |
| --- |
| {  "satId": "CS1",     "sensorId": "CSAR",     "status" : 0,     "task\_type" : "MVS"     "algo\_name" : "CS1\_CSAR\_L2\_CR\_MDS",     "algo\_version" : "V01",     "message" : "SUCCESS",     "organization" : "ht",     "programmer" : "宁莹",     "responsibler" : "邢树果",     "result" : [        {  "filePath" :   "/home/eric/untitled2/data/out/MDS\_CS1\_CSAR\_L2\_CR\_ 20200105T001102\_20200106T000415\_20060102T150405.h5",         "meta" :                           {                                    "aux" : "/root/Desktop/Ocean\_Target\_CalibrationConst/CalibrationConst-PolCalibration/4028fa817cea5968017d323df6e301c1\_cornerParams.xml",                                    "endTime" : "20160919T105325",                                    "extent" : "POLYGON ((107.887847900390625 39.622894287109375 0,107.887847900390625 39.632480621337891 0,107.894889831542969 39.632480621337891 0,107.894889831542969 39.622894287109375 0,107.887847900390625 39.622894287109375 0))",                                    "main" : "/root/Desktop/Ocean\_Target\_CalibrationConst/CalibrationConst-PolCalibration/GF3\_MYN\_QPSI\_000584\_E107.9\_N39.7\_20160919\_L1A\_AHV\_L10003269459/",                                    "parameter" : "",                                    "productionTime" : "20211119T9310",                                    "size" : 4,                                    "startTime" : "20160919T105321"，  "ImagingMode": QPSI,  "WaveCode": 213,  "PolarMode": AHV                           },           "typeid" : " CS1\_CSAR\_L2- CR "        }     ]  } |

#### 1.1.2.21米C-SAR L4产品检验匹配（ECMWF-N1D）

##### 1.1.2.2.1输入

表 1‑26检验匹配算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "matchType": " **CS1\_CSAR\_L4-ECMWF\_GRIB\_N1D** ",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "auxFile": [      "/home/eric/untitled2/data/N1D09100000091000001",      "/home/eric/untitled2/data/N1D09100000091030001",      "/home/eric/untitled2/data/N1D09100000091006001",      "/home/eric/untitled2/data/N1D09100000091009001",      "/home/eric/untitled2/data/N1D09101200091012001",      "/home/eric/untitled2/data/N1D09101200091015001",      "/home/eric/untitled2/data/N1D09101200091018001",      "/home/eric/untitled2/data/N1D09101200091021001",      "/home/eric/untitled2/data/N1D09110000091100001"    ],    "resultFolder": "/home/eric/untitled2/data/out/",    "primaryFile": "/home/eric/untitled2/data/CS1\_KAS\_WAV\_007409\_W85.7\_S26.3\_20180106\_L4\_SWF\_L40002909521\_005\_V01"    } |

表 1‑27 1米C-SAR卫星检验matchType组合列表

|  |  |  |
| --- | --- | --- |
| matchType组合 | 说明 | 有无auxFile |
| **CS1\_CSAR\_L4-ECMWF\_GRIB\_N1D** | **L4产品与ECMWF匹配；**  **用于1米CSAR L4级风速、风向、产品检验** | **有** |

##### 1.1.2.2.2输出

表 1‑281米C-SAR卫星检验成果列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 匹配数据集 | .h5 |
| 2 | 结果信息文件 | json |
| 3 | 日志文件 |  |
| 4 | 工作流文件 | .json |

表 1‑29匹配数据集内容列表

|  |  |  |
| --- | --- | --- |
| 匹配数据集内容序号 | 匹配数据集内容名称 | 维度 |
| 1 | L4产品纬度 SAR\_Lat | 1D |
| 2 | L4产品经度 SAR\_Lon | 1D |
| 3 | L4产品风速 SAR\_WindSpeed | 1D |
| 4 | L4产品风向 SAR\_WindDirection | 1D |
| 5 | ECMWF匹配点纬度 ECMWF\_Lat | 1D |
| 6 | ECMWF匹配点经度 ECMWF\_Lon | 1D |
| 7 | ECMWF匹配点风速 ECMWF\_WindSpeed | 1D |
| 8 | ECMWF匹配点风向 ECMWF\_WindDirection | 1D |
| 9 | 匹配点个数 MatchDataNum | 1D |

表 1‑30结果信息文件 [结果信息 .json样例： （ 黄底 为必须项 ）]

|  |
| --- |
| {  "satId": "CS1",     "sensorId": "CSAR",     "status" : 0,     "task\_type" : "MVS"     "algo\_name" : " CS1\_CSAR\_L4\_ECMWF\_GRIB\_N1D\_MDS ",     "algo\_version" : "V01",     "message" : "SUCCESS",     "organization" : "ht",     "programmer" : "廖忠云",     "responsibler" : "邢树果",          "mode\_type" : "\*",#将输入json中的内容填过来     "result" : [        {"filePath" :           "/home/eric/untitled2/data/out/MDS\_CS1\_CSAR\_L4\_ECMWF\_ 20200105T001102\_20200106T000415\_20060102T150405.h5",           "meta" : {              "aux" : "/home/eric/untitled2/data/N1D09100000091000001;/home/eric/untitled2/data/N1D09100000091006001;/home/eric/untitled2/data/N1D09100000091009001;/home/eric/untitled2/data/N1D09101200091012001;/home/eric/untitled2/data/N1D09101200091015001;/home/eric/untitled2/data/N1D09101200091018001;/home/eric/untitled2/data/N1D09101200091021001;/home/eric/untitled2/data/N1D09100000091030001; ",  "Time\_range" :30,  "Space\_range" :30,              "endTime" : "20210910T235300",              "extent" : "POLYGON ((-179.993576049805 -66.6427536010742 0,-179.993576049805 74.0139312744141 0,179.491775512695 74.0139312744141 0,179.491775512695 -66.6427536010742 0,-179.993576049805 -66.6427536010742 0))",              "main" : "/home/eric/untitled2/data/H2E\_OPER\_SMR\_L2B\_OR\_20210910T220723\_20210910T235346\_01466\_dps\_250\_22\_SST.h5",              "parameter" : "L4Product",              "productionTime" : "20210922T064036",              "size" : 56761,              "startTime" : "20210910T235346"           },           "typeid" : " CS1\_CSAR\_L4-ECMWF\_GRIB\_N1D "        }     ]  } |

#### 1.1.2.31米C-SAR L4产品检验匹配（ECMWF-N1P）

##### 1.1.2.3.1输入

表 1‑31检验匹配算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "matchType": " **CS1\_CSAR\_L4-ECMWF\_GRIB\_N1P** ",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "auxFile": [      "/home/eric/untitled2/data/N1P09100000091000001",      "/home/eric/untitled2/data/N1P09100000091030001",      "/home/eric/untitled2/data/N1P09100000091006001",      "/home/eric/untitled2/data/N1P09100000091009001",      "/home/eric/untitled2/data/N1P09101200091012001",      "/home/eric/untitled2/data/N1P09101200091015001",      "/home/eric/untitled2/data/N1P09101200091018001",      "/home/eric/untitled2/data/N1P09101200091021001",      "/home/eric/untitled2/data/N1P09110000091100001"    ],    "resultFolder": "/home/eric/untitled2/data/out/",    "primaryFile": "/home/eric/untitled2/data/CS1\_KAS\_WAV\_007409\_W85.7\_S26.3\_20180106\_L4\_SWF\_L40002909521\_005\_V01"    } |

表 1‑32 1米C-SAR卫星检验matchType组合列表

|  |  |  |
| --- | --- | --- |
| matchType组合 | 说明 | 有无auxFile |
| **CS1\_CSAR\_L4-ECMWF\_GRIB\_N1P** | **L4产品与ECMWF匹配；**  **用于1米CSAR L4级波高、波长、波向产品检验** | **有** |

##### 1.1.2.3.2输出

表 1‑331米C-SAR卫星检验成果列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 匹配数据集 | .h5 |
| 2 | 结果信息文件 | json |
| 3 | 日志文件 |  |
| 4 | 工作流文件 | .json |

表 1‑34匹配数据集内容列表

|  |  |  |
| --- | --- | --- |
| 匹配数据集内容序号 | 匹配数据集内容名称 | 维度 |
| 1 | L4产品纬度 SAR\_Lat | 1D |
| 2 | L4产品经度 SAR\_Lon | 1D |
| 3 | L4产品有效波高 SAR\_SWH | 1D |
| 4 | L4产品波长SAR\_WaveLength | 1D |
| 5 | L4产品波向SAR\_WaveDirection | 1D |
| 6 | ECMWF匹配点纬度 ECMWF\_Lat | 1D |
| 7 | ECMWF匹配点经度 ECMWF\_Lon | 1D |
| 8 | ECMWF匹配点有效波高 ECMWF\_SWH | 1D |
| 9 | ECMWF匹配点波长 ECMWF\_WaveLength | 1D |
| 10 | ECMWF匹配点波向 ECMWF\_WaveDirection | 1D |
| 11 | 匹配点个数 MatchDataNum | 1D |

表 1‑35结果信息文件 [结果信息 .json样例： （ 黄底 为必须项 ）]

|  |
| --- |
| {  "satId": "CS1",     "sensorId": "CSAR",     "status" : 0,     "task\_type" : "MVS"     "algo\_name" : " CS1\_CSAR\_L4\_ECMWF\_GRIB\_N1P\_MDS ",     "algo\_version" : "V01",     "message" : "SUCCESS",     "organization" : "ht",     "programmer" : "廖忠云",     "responsibler" : "邢树果",          "mode\_type" : "\*",#将输入json中的内容填过来     "result" : [        {"filePath" :           "/home/eric/untitled2/data/out/MDS\_CS1\_CSAR\_L4\_ECMWF\_ 20200105T001102\_20200106T000415\_20060102T150405.h5",           "meta" : {              "aux" : "/home/eric/untitled2/data/N1D09100000091000001;/home/eric/untitled2/data/N1D09100000091006001;/home/eric/untitled2/data/N1D09100000091009001;/home/eric/untitled2/data/N1D09101200091012001;/home/eric/untitled2/data/N1D09101200091015001;/home/eric/untitled2/data/N1D09101200091018001;/home/eric/untitled2/data/N1D09101200091021001;/home/eric/untitled2/data/N1D09100000091030001; ",  "Time\_range" :30,  "Space\_range" :30,              "endTime" : "20210910T235300",              "extent" : "POLYGON ((-179.993576049805 -66.6427536010742 0,-179.993576049805 74.0139312744141 0,179.491775512695 74.0139312744141 0,179.491775512695 -66.6427536010742 0,-179.993576049805 -66.6427536010742 0))",              "main" : "/home/eric/untitled2/data/H2E\_OPER\_SMR\_L2B\_OR\_20210910T220723\_20210910T235346\_01466\_dps\_250\_22\_SST.h5",              "parameter" : "L4Product",              "productionTime" : "20210922T064036",              "size" : 56761,              "startTime" : "20210910T235346"           },           "typeid" : " CS1\_CSAR\_L4-ECMWF\_GRIB\_N1D "        }     ]  } |

#### 1.1.2.41米C-SAR L4产品检验匹配（NDBC浮标）

##### 1.1.2.4.1输入

表 1‑36检验匹配算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "matchType": " **CS1\_CSAR\_L4-NDBC\_TXT** ",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "auxFile": [  ~~"/home/eric/untitled2/data/N1D09100000091000001",~~  ~~"/home/eric/untitled2/data/N1D09100000091030001",~~  ~~"/home/eric/untitled2/data/N1D09100000091006001",~~  ~~"/home/eric/untitled2/data/N1D09100000091009001",~~  ~~"/home/eric/untitled2/data/N1D09101200091012001",~~  ~~"/home/eric/untitled2/data/N1D09101200091015001",~~  ~~"/home/eric/untitled2/data/N1D09101200091018001",~~  ~~"/home/eric/untitled2/data/N1D09101200091021001",~~  ~~"/home/eric/untitled2/data/N1D09110000091100001"~~    ],    "resultFolder": "/home/eric/untitled2/data/out/",    "primaryFile":"/home/eric/untitled2/data/ CS1\_KAS\_WAV\_007409\_W85.7\_S26.3\_20180106\_L4\_SWF\_L40002909521\_005\_V01"    } |

表 1‑37 1米C-SAR卫星检验matchType组合列表

|  |  |  |
| --- | --- | --- |
| matchType组合 | 说明 | 有无auxFile |
| **CS1\_CSAR\_L4-NDBC\_TXT** | **L4产品与NDBC匹配；**  **用于1米CSAR L4级风速、风向产品检验** | **有** |

##### 1.1.2.4.2输出

表 1‑381米C-SAR卫星检验成果列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 匹配数据集 | .h5 |
| 2 | 结果信息文件 | json |
| 3 | 日志文件 |  |
| 4 | 工作流文件 | .json |

表 1‑39  CS1\_CSAR\_L4-NDBC\_TXT\_wind匹配数据集内容列表

|  |  |  |
| --- | --- | --- |
| 匹配数据集内容序号 | 匹配数据集内容名称 | 维度 |
| 1 | L4产品纬度 SAR\_Lat | 1D |
| 2 | L4产品经度 SAR\_Lon | 1D |
| 3 | L4产品风速 SAR\_WindSpeed | 1D |
| 4 | L4产品风向 SAR\_WindDirection | 1D |
| 5 | L4产品时间 SAR\_Time | 1D |
| 6 | NDBC浮标纬度 NDBC\_Lat | 1D |
| 7 | NDBC浮标经度 NDBC\_Lon | 1D |
| 8 | NDBC浮标风速 NDBC\_WindSpeed | 1D |
| 9 | NDBC浮标风向 NDBC\_WindDirection | 1D |
| 10 | NDBC匹配点时间 NDBC\_Time | 1D |
| 11 | 匹配点个数 MatchDataNum | 1D |

表 1‑40  CS1\_CSAR\_L4-NDBC\_TXT\_wave匹配数据集内容列表

|  |  |  |
| --- | --- | --- |
| 匹配数据集内容序号 | 匹配数据集内容名称 | 维度 |
| 1 | L4产品纬度 SAR\_Lat | 1D |
| 2 | L4产品经度 SAR\_Lon | 1D |
| 3 | L4产品有效波高 SAR\_SWH | 1D |
| 4 | L4产品时间 SAR\_Time | 1D |
| 5 | NDBC浮标纬度 NDBC\_Lat | 1D |
| 6 | NDBC浮标经度 NDBC\_Lon | 1D |
| 7 | NDBC浮标有效波高 NDBC\_SWH | 1D |
| 8 | NDBC匹配点时间 NDBC\_Time | 1D |
| 9 | 匹配点个数MatchDataNum | 1D |

表 1‑41结果信息文件 [结果信息 .json样例： （ 黄底 为必须项 ）]

|  |
| --- |
| {  "satId": "CS1",     "sensorId": "CSAR",     "status" : 0,     "task\_type" : "MVS"     "algo\_name" : " CS1\_CSAR\_L4\_NDBC\_ATM\_TXT\_MDS",     "algo\_version" : "V01",     "message" : "SUCCESS",     "organization" : "ht",     "programmer" : "廖忠云",     "responsibler" : "邢树果",          "mode\_type" : "\*",#将输入json中的内容填过来     "result" : [        {"filePath" :            "/home/eric/untitled2/data/out/MDS\_CS1\_CSAR\_L4\_NDBC\_ 20200105T001102\_20200106T000415\_20060102T150405.h5",           "meta" : {              "aux" : "/home/eric/untitled2/data/N1D09100000091000001;/home/eric/untitled2/data/N1D09100000091006001;/home/eric/untitled2/data/N1D09100000091009001;/home/eric/untitled2/data/N1D09101200091012001;/home/eric/untitled2/data/N1D09101200091015001;/home/eric/untitled2/data/N1D09101200091018001;/home/eric/untitled2/data/N1D09101200091021001;/home/eric/untitled2/data/N1D09100000091030001; ",              "SST\_range" : [ -3, 35 ],  "Time\_range" :30,  "Space\_range" :2,              "endTime" : "20210910T235300",              "extent" : "POLYGON ((-179.993576049805 -66.6427536010742 0,-179.993576049805 74.0139312744141 0,179.491775512695 74.0139312744141 0,179.491775512695 -66.6427536010742 0,-179.993576049805 -66.6427536010742 0))",              "main" : "/home/eric/untitled2/data/H2E\_OPER\_SMR\_L2B\_OR\_20210910T220723\_20210910T235346\_01466\_dps\_250\_22\_SST.h5",              "parameter" : "L4Product",              "productionTime" : "20210922T064036",              "size" : 56761,              "startTime" : "20210910T235346"           },           "typeid" : " CS1\_CSAR\_L4-NDBC\_TXT\_wind/wave "        }     ]  } |

#### 1.1.2.51米C-SAR L4产品检验匹配（ASCAT-风场）

##### 1.1.2.5.1输入

表 1‑42检验匹配算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "matchType": " **CS1\_CSAR\_L4-ASCATB\_L2\_25KM**",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "auxFile": [      "/home/eric/untitled2/data/N1D09100000091000001",      "/home/eric/untitled2/data/N1D09100000091030001",      "/home/eric/untitled2/data/N1D09100000091006001",      "/home/eric/untitled2/data/N1D09100000091009001",      "/home/eric/untitled2/data/N1D09101200091012001",      "/home/eric/untitled2/data/N1D09101200091015001",      "/home/eric/untitled2/data/N1D09101200091018001",      "/home/eric/untitled2/data/N1D09101200091021001",      "/home/eric/untitled2/data/N1D09110000091100001"    ],    "resultFolder": "/home/eric/untitled2/data/out/",    "primaryFile": "/home/eric/untitled2/data/ CS1\_KAS\_WAV\_007409\_W85.7\_S26.3\_20180106\_L4\_SWF\_L40002909521\_005\_V01"    } |

表 1‑43 1米C-SAR卫星检验matchType组合列表

|  |  |  |
| --- | --- | --- |
| matchType组合 | 说明 | 有无auxFile |
| **CS1\_CSAR\_L4-ASCATB\_L2\_25KM** | **L4产品与NDBC匹配；**  **用于1米CSAR L4级风速、风向检验** | **有** |

##### 1.1.2.5.2输出

表 1‑441米C-SAR卫星检验成果列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 匹配数据集 | .h5 |
| 2 | 结果信息文件 | json |
| 3 | 日志文件 |  |
| 4 | 工作流文件 | .json |

表 1‑45匹配数据集内容列表

|  |  |  |
| --- | --- | --- |
| 匹配数据集内容序号 | 匹配数据集内容名称 | 维度 |
| 1 | L4产品纬度 SAR\_Lat | 1D |
| 2 | L4产品经度 SAR\_Lon | 1D |
| 3 | L4产品风速 SAR\_WindSpeed | 1D |
| 4 | L4产品风向 SAR\_WindDirection | 1D |
| 5 | L4产品时间 SAR\_Time | 1D |
| 6 | ASCATB浮标纬度 ASCATB\_Lat | 1D |
| 7 | ASCATB浮标经度 ASCATB\_Lon | 1D |
| 8 | ASCATB浮标风速 ASCATB\_WindSpeed | 1D |
| 9 | ASCATB浮标风向 ASCATB\_WindDirection | 1D |
| 10 | ASCATB匹配点时间 ASCATB\_Time | 1D |
| 11 | 匹配点个数 MatchDataNum | 1D |

表 1‑46结果信息文件 [结果信息 .json样例： （ 黄底 为必须项 ）]

|  |
| --- |
| {  "satId": "CS1",     "sensorId": "CSAR",     "status" : 0,     "task\_type" : "MVS"     "algo\_name" : "CS1\_CSAR\_L4\_ASCATB\_L2\_25KM\_MDS",     "algo\_version" : "V01",     "message" : "SUCCESS",     "organization" : "ht",     "programmer" : "廖忠云",     "responsibler" : "邢树果",          "mode\_type" : "\*",#将输入json中的内容填过来     "result" : [        {"filePath" :            "/home/eric/untitled2/data/out/MDS\_CS1\_CSAR\_L4\_ASCAT\_ 20200105T001102\_20200106T000415\_20060102T150405.h5",           "meta" : {              "aux" : "/home/eric/untitled2/data/N1D09100000091000001;/home/eric/untitled2/data/N1D09100000091006001;/home/eric/untitled2/data/N1D09100000091009001;/home/eric/untitled2/data/N1D09101200091012001;/home/eric/untitled2/data/N1D09101200091015001;/home/eric/untitled2/data/N1D09101200091018001;/home/eric/untitled2/data/N1D09101200091021001;/home/eric/untitled2/data/N1D09100000091030001; ",              "SST\_range" : [ -3, 35 ],  "Time\_range" :30,  "Space\_range" :30,              "endTime" : "20210910T235300",              "extent" : "POLYGON ((-179.993576049805 -66.6427536010742 0,-179.993576049805 74.0139312744141 0,179.491775512695 74.0139312744141 0,179.491775512695 -66.6427536010742 0,-179.993576049805 -66.6427536010742 0))",              "main" : "/home/eric/untitled2/data/H2E\_OPER\_SMR\_L2B\_OR\_20210910T220723\_20210910T235346\_01466\_dps\_250\_22\_SST.h5",              "parameter" : "L4Product",              "productionTime" : "20210922T064036",              "size" : 56761,              "startTime" : "20210910T235346"           },           "typeid" : " CS1\_CSAR\_L4-ASCATB\_L2\_25KM "        }     ]  } |

### 1.1.3  1米C-SAR卫星定标结果

#### 1.1.3.1   定标算法类型一（适用于角反射器辐射定标）

##### 1.1.3.1.1输入

表 1‑47定标结果计算算法输入

|  |
| --- |
| {  "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",  "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",  "taskType": "CS1\_CSAR\_L1A\_CR\_RCAL",  "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",  "mdss": [  {  "mds\_type": "CS1\_CSAR\_L1A-CR0",  "files": [  "CS1\_xxxx.h5",  "CS1\_xxxx.h5",  "CS1\_xxxx.h5"  ]  }  ],  "resultFolder": "/home/eric/untitled2/data/out/"  "mode\_type": "DAILY" ,#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY  "ImagingMode": [],  "WaveCode": [],  "PolarMode": [] } |

##### 1.1.3.1.2输出

表 1‑48定标结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 定标系数结果信息文件 | xxx.json |
| 2 | 日志文件 | xxx.log |
| 3 | 工作流文件 | xxxFlow.json |

表 1‑49定标系数相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 定标常数标准差CalibrationConst\_std | 1D |
| 2 | 定标常数均值CalibrationConst\_mean | 1D |
| 3 | 匹配点数量MatchCornerNum | 1D |
| 4 | 1米C-SAR成像模式 ImagingMode | 1D |
| 5 | 1米C-SAR波位 WaveCode | 1D |
| 6 | 1米C-SAR极化模式 PolarMode | 1D |

表 1‑50输出图片列表和命名规则

|  |  |  |
| --- | --- | --- |
| 图片序号 | 图片名称 | 命名规则 |
| 1 | 角反射器分布图 | PIC\_DIS\_卫星\_载荷\_产品级别\_参考数据（\_级别）\_要素\_起止时间\_版本号.png |

表 1‑51定标系数结果信息文件内容 [.json样例： （ 黄底 为必须项 ）]

|  |
| --- |
| {    "satId": "CSAR01",    "sensorId": "1CSAR",    "level": "L1A",  "status" : 0,    "algo\_name" : "CS1\_CSAR\_L1A\_CR\_CAL",  "method\_name" : "CUCRR",#定标方法名    "algo\_version" : "V01",    "message" : "SUCCESS",    "organization" : "ht",    "programmer": "李俊洲",    "responsibler": "邢树果",  "mode\_type" : "周期模式",#将输入json中的内容填过来    "start\_time": "20201010T102030",    "end\_time": "20201010T102030",  "produce\_time" : "20220307T174104",    "coefs": [      {  "ImagingMode": QPSI,        "WaveCode": 213,        "PolarMode": AHV,  "MatchDataNum": 500,        "CalibrationConst ": 32.5 32.4 0 0,  "CalibrationConst\_mean": 32.5 32.4 0 0,        "CalibrationConst\_std": 32.5 32.4 0 0,  "image\_matchresult\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg"      },      {  "ImagingMode": QPSI,        "WaveCode": 224,        "PolarMode": AHV,  "MatchDataNum": 500,        "CalibrationConst ": 32.5 32.4 0 0,  "CalibrationConst\_mean": 32.5 32.4 0 0,        "CalibrationConst\_std": 32.5 32.4 0 0,  "image\_matchresult\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg"      },      {  "ImagingMode": QPSI,        "WaveCode": 256,        "PolarMode": AHV,  "MatchDataNum": 500,        "CalibrationConst ": 32.5 32.4 0 0,  "CalibrationConst\_mean": 32.5 32.4 0 0,        "CalibrationConst\_std": 32.5 32.4 0 0,  "image\_matchresult\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg"      },    ]  } |

#### 1.1.3.2   定标算法类型二（适用于角反射器极化定标）

##### 1.1.3.2.1输入

表 1‑52定标结果计算算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "taskType": "CS1\_CSAR\_L1A\_CR\_PCAL",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "mdss": [      {        "mds\_type": "CS1\_CSAR\_L1A-CR4",        "files": [          "CS1\_xxxx.h5",          "CS1\_xxxx.h5",          "CS1\_xxxx.h5"        ]      }    ],    "resultFolder": "/home/eric/untitled2/data/out/"  "mode\_type" : "DAILY"#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY  "ImagingMode": [],  "WaveCode": [],  "PolarMode": []    } |

##### 1.1.3.2.2输出

表 1‑53定标结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 定标系数结果信息文件 | xxx.json |
| 2 | 日志文件 | xxx.log |
| 3 | 工作流文件 | xxxFlow.json |

表 1‑54定标结果相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 发射失真矩阵T\_Matrix | 2D |
| 2 | 接收失真矩阵R\_Matrix | 2D |
| 3 | 匹配点数量MatchCornerNum | 1D |
| 4 | 1米C-SAR成像模式 ImagingMode | 1D |
| 5 | 1米C-SAR波位 WaveCode | 1D |
|  | 1米C-SAR极化模式 PolarMode | 1D |

表 1‑55输出图片列表和命名规则

|  |  |  |
| --- | --- | --- |
| 图片序号 | 图片名称 | 命名规则 |
| 1 | 角反射器分布图 | PIC\_DIS\_卫星\_载荷\_产品级别\_参考数据（\_级别）\_要素\_起止时间\_版本号.png |

表 1‑56定标系数结果信息文件内容 [.json样例： （ 黄底 为必须项 ）]

|  |
| --- |
| {    "satId": "CSAR01",    "sensorId": "1CSAR",    "level": "L1A",  "status" : 0,    "algo\_name" : "CS1\_CSAR\_L1A\_CP\_CAL",  "method\_name" : "CUCRP",#定标方法名    "algo\_version" : "V01",    "message" : "SUCCESS",    "organization" : "ht",    "programmer": "李俊洲",    "responsibler": "邢树果",  "mode\_type" : "周期模式",#将输入json中的内容填过来    "start\_time": "20201010T102030",    "end\_time": "20201010T102030",  "produce\_time" : "20220307T174104",  "coefs": [      {       "ImagingMode": QPSI,        "WaveCode": 213,        "PolarMode": AHV,  "MatchDataNum": 500,        "T\_Matrix": 1+i0.1 1+i0.1 1+i0.1 1+i0.1,        "R\_Matrix": 1+i0.1 1+i0.1 1+i0.1 1+i0.1      },      {       "ImagingMode": QPSI,        "WaveCode": 224,        "PolarMode": AHV,  "MatchDataNum": 500,        "T\_Matrix": 1+i0.1 1+i0.1 1+i0.1 1+i0.1,        "R\_Matrix": 1+i0.1 1+i0.1 1+i0.1 1+i0.1      },      {       "ImagingMode": QPSII,        "WaveCode": 350,        "PolarMode": AHV,  "MatchDataNum": 500,        "T\_Matrix": 1+i0.1 1+i0.1 1+i0.1 1+i0.1,        "R\_Matrix": 1+i0.1 1+i0.1 1+i0.1 1+i0.1      },    ]  } |

#### 1.1.3.3   定标算法类型三（适用于ECMWF辐射定标-海洋目标法）

##### 1.1.3.3.1输入

表 1‑57定标结果计算算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "taskType": " **CS1\_CSAR\_L1A\_ECMWF\_GRIB\_N1D\_RCAL**",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "mdss": [      {        "mds\_type": "**CS1\_CSAR\_L1A-ECMWF\_GRIB N1D**",        "files": [          " xxxx.h5",          " xxxx.h5",          " xxxx.h5"        ]      }    ],    "resultFolder": "/home/eric/untitled2/data/out/"  "mode\_type" : "DAILY"#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY  "ImagingMode": [],  "WaveCode": [],  "PolarMode": []  } |

##### 1.1.3.3.2输出

表 1‑58定标结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 定标系数结果信息文件 | json |
| 2 | 日志文件 |  |
| 3 | 工作流文件 | .json |

表 1‑59定标系数相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 定标常数标准差CalibrationConst\_std | 1D |
| 2 | 定标常数均值CalibrationConst\_mean | 1D |
| 3 | 匹配点数量MatchDataNum | 1D |
| 4 | 1米C-SAR成像模式 ImagingMode | 1D |
| 5 | 1米C-SAR波位 WaveCode | 1D |
| 6 | 1米C-SAR极化模式 PolarMode | 1D |

表 1‑60输出图片列表和命名规则

|  |  |  |
| --- | --- | --- |
| 图片序号 | 图片名称 | 命名规则 |
| 1 | 误差分布图 | PIC\_DIS\_卫星\_载荷\_产品级别\_参考数据（\_级别）\_要素\_起止时间\_版本号.png |
| 2 | 散点密度图 | PIC\_SCATTER\_卫星\_载荷\_产品级别\_参考数据（\_级别）\_要素（\_阶段）\_起止时间\_版本号.png |
| 3 | 误差概率直方图 | PIC\_HIST\_卫星\_载荷\_产品级别\_参考数据（\_级别）\_要素（\_阶段）\_起止时间\_版本号.png |

表 1‑61定标系数结果信息文件内容 [.json样例： （ 黄底 为必须项 ）]

|  |
| --- |
| {    "satId": "CSAR01",    "sensorId": "1CSAR",    "level": "L1A",  "status" : 0,  "algo\_name" : "CS1\_CSAR\_L1A\_ECMWF\_GRIB\_N1D\_RCAL",  "method\_name" : "CUOT",#定标方法名    "algo\_version" : "V01",    "message" : "SUCCESS",    "organization" : "ht",    "programmer": "李俊洲",    "responsibler": "邢树果",  "mode\_type" : "Daily",#将输入json中的内容填过来,Daily,Cycle,Weekly,MONTH,Yearly    "start\_time": "20201010T102030",    "end\_time": "20201010T102030",  "produce\_time" : "20220307T174104",  "image\_matchresult\_path":"/home/eric/untitled2/data/out/\*.jpg",    "coefs": [      {  "ImagingMode": QPSI,  "WaveCode": 213,  "PolarMode": AHV,  "MatchDataNum": 500,  "CalibrationConst": 32.5 32.4 0 0,  "CalibrationConst\_mean": 32.5 32.4 0 0,  "CalibrationConst\_std": 32.5 32.4 0 0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg"      },    ]  } |

#### 1.1.3.4   定标算法类型四（适用于亚马逊雨林辐射定标-亚马逊雨林定标法）

##### 1.1.3.4.1输入

表 1‑62定标结果计算算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "taskType": "**CS1\_CSAR\_L1A\_AMAZON\_RCAL**",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "mdss": [      {        "mds\_type": "**CS1\_CSAR\_L1A-AMAZON**",        "files": [          " xxxx.h5",          " xxxx.h5",          " xxxx.h5"        ]      }    ],    "resultFolder": "/home/eric/untitled2/data/out/"  "mode\_type" : "DAILY"#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY  "ImagingMode": [],  "WaveCode": [],  "PolarMode": []  } |

##### 1.1.3.4.2输出

表 1‑63定标结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 定标系数结果信息文件 | json |
| 2 | 日志文件 |  |
| 3 | 工作流文件 | .json |
| 4 | 距离向双程天线方向图 | \*.dat |

表 1‑64定标系数相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 定标常数标准差CalibrationConst\_std | 1D |
| 2 | 定标常数均值CalibrationConst\_mean | 1D |
| 3 | 匹配点数量MatchDataNum | 1D |
| 4 | 1米C-SAR成像模式 ImagingMode | 1D |
| 5 | 1米C-SAR波位 WaveCode | 1D |
| 6 | 1米C-SAR极化模式 PolarMode | 1D |

表 1‑65输出图片列表和命名规则

|  |  |  |
| --- | --- | --- |
| 图片序号 | 图片名称 | 命名规则 |
| 1 | 误差分布图（亚马逊雨林区域） | PIC\_DIS\_卫星\_载荷\_产品级别\_参考数据（\_级别）\_要素\_起止时间\_版本号.png |
| 2 | 散点密度图 | PIC\_SCATTER\_卫星\_载荷\_产品级别\_参考数据（\_级别）\_要素（\_阶段）\_起止时间\_版本号.png |
| 3 | 误差概率直方图 | PIC\_HIST\_卫星\_载荷\_产品级别\_参考数据（\_级别）\_要素（\_阶段）\_起止时间\_版本号.png |

表 1‑66定标系数结果信息文件内容 [.json样例： （ 黄底 为必须项 ）]

|  |
| --- |
| {    "satId": "CSAR01",    "sensorId": "1CSAR",    "level": "L1A",  "status" : 0,  "algo\_name" : "CS1\_CSAR\_L1A\_AMAZON\_RCAL",  "method\_name" : " CUAF ",#定标方法名  "algo\_version" : "V01",   "message" : "SUCCESS",    "organization" : "ht",  "programmer": "李俊洲",  "responsibler": "邢树果",  "mode\_type" : "\*",#将输入json中的内容填过来    "start\_time": "20201010T102030",    "end\_time": "20201010T102030",  "produce\_time" : "20220307T174104",  "image\_matchresult\_path":"/home/eric/untitled2/data/out/\*.jpg",    "coefs": [      {  "ImagingMode": QPSI,  "WaveCode": 213,  "PolarMode": AHV,  "MatchDataNum": 500,  "CalibrationConst ": 32.5 32.4 0 0,  "CalibrationConst\_mean": 32.5 32.4 0 0,  "CalibrationConst\_std": 32.5 32.4 0 0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_AntennaPattern\_path":"/home/eric/untitled2/data/out/\*.jpg"      },    ],  "Antenna": [      {  "filePath" : "/home/eric/untitled2/data/out/\*.dat",%天线方向图路径  "ImagingMode": QPSI,        "WaveCode": 213,        "PolarMode": AHV      },       ]  } |

### 1.1.4  1米C-SAR卫星检验结果

#### 1.1.4.1   检验算法类型一（适用于角反射器辐射检验）

##### 1.1.4.1.1输入

表 1‑67检验结果计算算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "taskType":"**CS1\_CSAR\_L1A\_CR\_RVAL**",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "mdss": [      {        "mds\_type": " **CS1\_CSAR\_L1A-CR0**",        "files": [          " xxxx.h5",          " xxxx.h5",          " xxxx.h5"        ]      }    ],    "resultFolder": "/home/eric/untitled2/data/out/"  "mode\_type" : "DAILY"#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY  "ImagingMode": [],  "WaveCode": [],  "PolarMode": []  } |

##### 1.1.4.1.2输出

表 1‑68检验结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 检验结果信息文件 | json |
| 2 | 日志文件 |  |
| 3 | 工作流文件 | .json |

表 1‑69定标系数相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 匹配角反射器的数量 MatchCornerNum | 1D |
| 2 | 平均偏差（HH，HV，VH，VV）mean\_bias | 1D |
| 3 | 绝对偏差（HH，HV，VH，VV）abs\_bias | 1D |
| 4 | 标准差（HH，HV，VH，VV）std | 1D |
| 7 | 1米C-SAR成像模式 ImagingMode | 1D |
| 8 | 1米C-SAR波位 WaveCode | 1D |
| 9 | 1米C-SAR极化模式 PolarMode | 1D |

表 1‑70输出图片列表和命名规则

|  |  |  |
| --- | --- | --- |
| 图片序号 | 图片名称 | 命名规则 |
| 1 | 角反射器分布图 | PIC\_DIS\_卫星\_载荷\_产品级别\_参考数据（\_级别）\_要素\_起止时间\_版本号.png |

表 1‑71检验结果信息文件内容 [.json样例： （ 黄底 为必须项 ）]

|  |
| --- |
| {    "satId": "CS1",    "sensorId": "CSAR",    "level": "L1A",  "status" : 0,  "algo\_name": "CS1\_CSAR\_L1A\_CR\_RVAL",  "method\_name" : "RVAL",#检验方法名  "algo\_version": "V01",  "message": "SUCCESS",    "organization": "ht",    "programmer": "宁莹",    "responsibler": "邢树果",  "mode\_type" : "\*",#将输入json中的内容填过来  "start\_time": "20201010T102030",  "end\_time": "20201010T102030",  "produce\_time" : "20220307T174104",  "result": [      {        "parameter": "Radio",        "resolution": "RES0",（统一空值）        "mean\_bias": 1.0 1.0 1.0 1.0,        "abs\_bias": 0.0 1.0 1.0 1.0,        "MatchCornerNum": 32,        "std": 0.0 1.0 1.0 1.0,  "ImagingMode": QPSI,        "WaveCode": 213,        "PolarMode": AHV,  "MatchCornerNum": 500,  "image\_matchresult\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path":"/home/eric/untitled2/data/out/\*.jpg"      },  {        "parameter": "Radio",        "resolution": "RES0",（统一空值）        "mean\_bias": 1.0 1.0 1.0 1.0,        "abs\_bias": 0.0 1.0 1.0 1.0,        "MatchCornerNum": 32,        "std": 0.0 1.0 1.0 1.0,  "ImagingMode": QPSII,        "WaveCode": 255,        "PolarMode": AHV,  "MatchCornerNum": 500,  "image\_matchresult\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path":"/home/eric/untitled2/data/out/\*.jpg"      },    ]  } |

#### 1.1.4.2   检验算法类型二（适用于角反射器极化检验）

##### 1.1.4.2.1输入

表 1‑72检验结果计算算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "taskType": "**CS1\_CSAR\_L1A\_CR\_PVAL**",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "mdss": [      {        "mds\_type": "**CS1\_CSAR\_L1A\_CR3**",        "files": [          " \_xxxx.h5",          " \_xxxx.h5",          " \_xxxx.h5"        ]      }    ],    "resultFolder": "/home/eric/untitled2/data/out/"  "mode\_type" : "DAILY"#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY  "ImagingMode": [],  "WaveCode": [],  "PolarMode": []  } |

##### 1.1.4.2.2输出

表 1‑73检验结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 检验结果信息文件 | json |
| 2 | 日志文件 |  |
| 3 | 工作流文件 | .json |

表 1‑74定标系数相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 匹配点数量 | 1D |
| 2 | 平均偏差(串扰、幅度不平衡、相位不平衡) | 1D |
| 3 | 绝对偏差 (串扰、幅度不平衡、相位不平衡) | 1D |
| 4 | 标准差(串扰、幅度不平衡、相位不平衡) | 1D |
| 5 | 1米C-SAR成像模式 ImagingMode |  |
| 6 | 1米C-SAR波位 WaveCode |  |
| 7 | 1米C-SAR极化模式 PolarMode |  |

表 1‑75输出图片列表和命名规则

|  |  |  |
| --- | --- | --- |
| 图片序号 | 图片名称 | 命名规则 |
| 1 | 角反射器分布图 | PIC\_DIS\_卫星\_载荷\_产品级别\_参考数据（\_级别）\_要素\_起止时间\_版本号.png |

表 1‑76检验结果信息文件内容 [.json样例： （ 黄底 为必须项 ）]

|  |
| --- |
| {    "satId": "CS1",    "sensorId": "CSAR",    "level": "L1A",  "status" : 0,    "algo\_name": "CS1\_CSAR\_L1A\_CR\_PVAL",  "method\_name" : "PVAL",#检验方法名    "algo\_version": "V01",    "message": "SUCCESS",    "organization": "ht",    "programmer": "宁莹",    "responsibler": "邢树果",  "mode\_type" : "\*",#将输入json中的内容填过来    "start\_time": "20201010T102030",    "end\_time": "20201010T102030",  "produce\_time" : "20220307T174104",    "result": [      {        "parameter": "CROSS(串扰)",        "resolution": "RES0",（统一空值）        "CROSS\_mean\_bias": 1.0,        "CROSS\_abs\_bias": 0.0,        "CROSS\_std": 0.0,        "AMP\_mean\_bias": 1.0,        "AMP\_abs\_bias": 0.0,        "AMP\_std": 0.0,        "PHASE\_mean\_bias": 1.0,        "PHASE\_abs\_bias": 0.0,        "PHASE\_std": 0.0,  "ImagingMode": QPSI,        "WaveCode": 213,        "PolarMode": AHV,  "MatchCornerNum": 500  "image\_matchresult\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_crosstalk\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_AmpImbalance\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_PhaseImbalance\_path":"/home/eric/untitled2/data/out/\*.jpg"      },  {        "parameter": "CROSS(串扰)",        "resolution": "RES0",（统一空值）        "CROSS\_mean\_bias": 1.0,        "CROSS\_abs\_bias": 0.0,        "CROSS\_std": 0.0,        "AMP\_mean\_bias": 1.0,        " AMP\_abs\_bias": 0.0,        "AMP\_std": 0.0,        "PHASE\_mean\_bias": 1.0,        "PHASE\_abs\_bias": 0.0,        "PHASE\_std": 0.0,  "ImagingMode": QPSII,        "WaveCode": 225,        "PolarMode": AHV,  "MatchCornerNum": 500,  "image\_matchresult\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_crosstalk\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_AmpImbalance\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_PhaseImbalance\_path":"/home/eric/untitled2/data/out/\*.jpg"      },  ]  } |

#### 1.1.4.3   检验算法类型三（适用于角反射器几何检验）

##### 1.1.4.3.1输入

表 1‑77检验结果计算算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "taskType": "**CS1\_CSAR\_L2\_CR\_GVAL**",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "mdss": [      {        "mds\_type": "**CS1\_CSAR\_L2-CR**",        "files": [          " \_xxxx.h5",          " \_xxxx.h5",          " \_xxxx.h5"        ]      }    ],    "resultFolder": "/home/eric/untitled2/data/out/"  "mode\_type" : "DAILY"#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY  "ImagingMode": [],  "WaveCode": [],  "PolarMode": []  } |

##### 1.1.4.3.2输出

表 1‑78检验结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 检验结果信息文件 | json |
| 2 | 日志文件 |  |
| 3 | 工作流文件 | .json |

表 1‑79定标系数相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 匹配点数量 | 1D |
| 2 | 平均偏差（位置） | 1D |
| 3 | 绝对偏差（位置） | 1D |
| 4 | 标准差（位置） | 1D |
| 5 | 均方根误差（位置） | 1D |
| 6 | 相关系数（位置） | 1D |
| 7 | 1米C-SAR成像模式 | 1D |
| 8 | 1米C-SAR波位 | 1D |
| 9 | 1米C-SAR极化模式 | 1D |

表 1‑80输出图片列表和命名规则

|  |  |  |
| --- | --- | --- |
| 图片序号 | 图片名称 | 命名规则 |
| 1 | 角反射器分布图 | PIC\_DIS\_卫星\_载荷\_产品级别\_参考数据（\_级别）\_要素\_起止时间\_版本号.png |

表 1‑81检验结果信息文件内容 [.json样例： （ 黄底 为必须项 ）]

|  |
| --- |
| {    "satId": "CS1",    "sensorId": "CSAR",    "level": "L2",  "status" : 0,    "algo\_name": "CS1\_CSAR\_L2\_CR\_GVAL",  "method\_name" : "GVAL",#检验方法名    "algo\_version": "V01",    "message": "SUCCESS",    "organization": "ht",    "programmer": "宁莹",    "responsibler": "邢树果",  "mode\_type" : "\*",#将输入json中的内容填过来    "start\_time": "20201010T102030",    "end\_time": "20201010T102030",  "produce\_time" : "20220307T174104",    "result": [      {        "parameter": "DISTANCE(位置)",        "resolution": "RES0",（统一空值）        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0，  "ImagingMode": QPSI,  "WaveCode": 213,  "PolarMode": AHV,  "MatchCornerNum": 500,  "image\_matchresult\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_GeoAccuracy\_path":"/home/eric/untitled2/data/out/\*.jpg"        },  } |

#### 1.1.4.4   检验算法类型四（L4级风场产品检验）

##### 1.1.4.4.1输入

表 1‑82检验结果计算算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "taskType": "**CS1\_CSAR\_L4\_Wind\_VAL**",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "mdss": [      {        "mds\_type": " **CS1\_CSAR\_L4-ECMWF\_GRIB\_N1D** ",        "files": [          "HY2\_SMR\_L2ATB-GMIL2NC\_xxxx.h5",          "HY2\_SMR\_L2ATB-GMIL2NC\_xxxx.h5",          "HY2\_SMR\_L2ATB-GMIL2NC\_xxxx.h5"        ]      }  {        "mds\_type": " **CS1\_CSAR\_L4-NDBC\_TXT\_wind** ",        "files": [          "HY2\_SMR\_L2ATB-GMIL2NC\_xxxx.h5",          "HY2\_SMR\_L2ATB-GMIL2NC\_xxxx.h5",          "HY2\_SMR\_L2ATB-GMIL2NC\_xxxx.h5"        ]      }      {        "mds\_type": " **CS1\_CSAR\_L4-ASCATB\_L2\_25KM** ",        "files": [          "HY2\_SMR\_L2ATB-GMIL2NC\_xxxx.h5",          "HY2\_SMR\_L2ATB-GMIL2NC\_xxxx.h5",          "HY2\_SMR\_L2ATB-GMIL2NC\_xxxx.h5"        ]      }    ],    "resultFolder": "/home/eric/untitled2/data/out/"  "mode\_type" : "DAILY"#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY    } |

##### 1.1.4.4.2输出

表 1‑83检验结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 检验结果信息文件 | json |
| 2 | 日志文件 |  |
| 3 | 工作流文件 | .json |

表 1‑84定标系数相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 匹配点数量 | 1D |
| 2 | 平均偏差（风速、风向） | 1D |
| 3 | 绝对偏差（风速、风向） | 1D |
| 4 | 标准差（风速、风向） | 1D |
| 5 | 均方根误差（风速、风向） | 1D |
| 6 | 相关系数（风速、风向） | 1D |

表 1‑85输出图片列表和命名规则

|  |  |  |
| --- | --- | --- |
| 图片序号 | 图片名称 | 命名规则 |
| 1 | 误差分布图（分风速和风向） | PIC\_DIS\_卫星\_载荷\_产品级别\_参考数据（\_级别）\_要素\_起止时间\_版本号.png |
| 2 | 散点密度图 | PIC\_SCATTER\_卫星\_载荷\_产品级别\_参考数据（\_级别）\_要素（\_阶段）\_起止时间\_版本号.png |
| 3 | 误差概率直方图 | PIC\_HIST\_卫星\_载荷\_产品级别\_参考数据（\_级别）\_要素（\_阶段）\_起止时间\_版本号.png |

表 1‑86检验结果信息文件内容 [.json样例： （ 黄底 为必须项 ）]

|  |
| --- |
| {    "satId": "CS1",    "sensorId": "CSAR",    "level": "L4",  "status" : 0,    "algo\_name": " CS1\_CSAR\_L4\_Wind\_VAL",  "method\_name" : "L4WIND",#检验方法名    "algo\_version": "V01",    "message": "SUCCESS",    "organization": "ht",    "programmer": "毕郁盼",    "responsibler": "邢树果",  "mode\_type" : "\*",#将输入json中的内容填过来    "start\_time": "20201010T102030",    "end\_time": "20201010T102030",  "produce\_time" : "20220307T174104",    "result": [  {  "aux\_type":"ECMWF",        "parameter": "WS",  "start\_time": "20201010T102030",        "end\_time": "20201010T102030",        "resolution": "RES0",（统一空值）        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"  },  {  "aux\_type":"ECMWF",        "parameter": "WDIR",  "start\_time": "20201010T102030",        "end\_time": "20201010T102030",        "resolution": "RES0",（统一空值）        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"  },  {  "aux\_type":"NDBC",        "parameter": "WS",  "start\_time": "20201010T102030",        "end\_time": "20201010T102030",        "resolution": "RES0",（统一空值）        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"  },  {  "aux\_type":"NDBC",        "parameter": "WDIR",  "start\_time": "20201010T102030",        "end\_time": "20201010T102030",        "resolution": "RES0",（统一空值）        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"    }  ]    } |

#### 1.1.4.5   检验算法类型四（L4级浪场产品检验）

##### 1.1.4.5.1输入

表 1‑87检验结果计算算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "taskType": "**CS1\_CSAR\_L4\_Wave\_VAL**",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "mdss": [      {        "mds\_type": "**CS1\_CSAR\_L4-ECMWF\_GRIB\_N1P**",        "files": [          "HY2\_SMR\_L2ATB-GMIL2NC\_xxxx.h5",          "HY2\_SMR\_L2ATB-GMIL2NC\_xxxx.h5",          "HY2\_SMR\_L2ATB-GMIL2NC\_xxxx.h5"        ]      }      {        "mds\_type": " **CS1\_CSAR\_L4-NDBC\_TXT\_wave**",        "files": [          "HY2\_SMR\_L2ATB-GMIL2NC\_xxxx.h5",          "HY2\_SMR\_L2ATB-GMIL2NC\_xxxx.h5",          "HY2\_SMR\_L2ATB-GMIL2NC\_xxxx.h5"        ]      }    ],    "resultFolder": "/home/eric/untitled2/data/out/"  "mode\_type" : "DAILY"#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY    } |

##### 1.1.4.5.2输出

表 1‑88检验结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 检验结果信息文件 | json |
| 2 | 日志文件 |  |
| 3 | 工作流文件 | .json |

表 1‑89定标系数相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 匹配点数量 | 1D |
| 2 | 平均偏差（有效波高、波长、波向） | 1D |
| 3 | 绝对偏差（有效波高、波长、波向） | 1D |
| 4 | 标准差（有效波高、波长、波向） | 1D |
| 5 | 均方根误差（有效波高、波长、波向） | 1D |
| 6 | 相关系数（有效波高、波长、波向） | 1D |

表 1‑90输出图片列表和命名规则

|  |  |  |
| --- | --- | --- |
| 图片序号 | 图片名称 | 命名规则 |
| 1 | 误差分布图（分有效波高、波长、波向） | PIC\_DIS\_卫星\_载荷\_产品级别\_参考数据（\_级别）\_要素\_起止时间\_版本号.png |
| 2 | 散点密度图 | PIC\_SCATTER\_卫星\_载荷\_产品级别\_参考数据（\_级别）\_要素（\_阶段）\_起止时间\_版本号.png |
| 3 | 误差概率直方图 | PIC\_HIST\_卫星\_载荷\_产品级别\_参考数据（\_级别）\_要素（\_阶段）\_起止时间\_版本号.png |

表 1‑91检验结果信息文件内容 [.json样例： （ 黄底 为必须项 ）]

|  |
| --- |
| {    "satId": "CS1",    "sensorId": "CSAR",    "level": "L4",  "status" : 0,    "algo\_name": " CS1\_CSAR\_L4\_Wave\_VAL",  "method\_name" : "L4WAVE",#检验方法名    "algo\_version": "V01",    "message": "SUCCESS",    "organization": "ht",    "programmer": "毕郁盼",    "responsibler": "邢树果",  "mode\_type" : "\*",#将输入json中的内容填过来    "start\_time": "20201010T102030",    "end\_time": "20201010T102030",  "produce\_time" : "20220307T174104",    "result": [    {  "aux\_type":"NDBC",        "parameter": "SWH",  "start\_time": "20201010T102030",        "end\_time": "20201010T102030",        "resolution": "RES0",        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },    {        "aux\_type":"NDBC",        "parameter": "WL",  "start\_time": "20201010T102030",        "end\_time": "20201010T102030",        "resolution": "RES0",（统一空值）        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },    {        "aux\_type":"NDBC",        "parameter": "MWD",  "start\_time": "20201010T102030",        "end\_time": "20201010T102030",        "resolution": "RES0",（统一空值）        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },  {  "aux\_type":"ECMWF",        "parameter": "SWH",  "start\_time": "20201010T102030",        "end\_time": "20201010T102030",        "resolution": "RES0",        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },    {        "aux\_type":"ECMWF",        "parameter": "WL",  "start\_time": "20201010T102030",        "end\_time": "20201010T102030",        "resolution": "RES0",（统一空值）        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },    {        "aux\_type":"ECMWF",        "parameter": "MWD",  "start\_time": "20201010T102030",        "end\_time": "20201010T102030",        "resolution": "RES0",（统一空值）        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      }  ]  } |

## 1.2    HY-2D卫星微波散射计

### 1.2.1   HY-2D卫星微波散射计定标匹配算法

#### 1.2.1.1输入

表 1‑122定标匹配算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "matchType": "**H2D\_SCA\_L1B-ECMWF\_GRIB**",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "auxFile": [      "/home/eric/untitled2/data/N1D09100000091000001",    "/home/eric/untitled2/data/N1D09101200091012001",    "/home/eric/untitled2/data/N1D09110000091100001"    ],    "resultFolder": "/home/eric/untitled2/data/out/",    "primaryFile": "/home/eric/untitled2/data/H2D\_OPER\_SCA\_L1B\_OR\_20210910T220723\_20210910T235346\_01466.h5  } |

表1‑123 海动卫星散射计定标matchType组合列表

|  |  |  |
| --- | --- | --- |
| matchType组合 | 说明 | 有无auxFile |
| **H2D\_SCA\_L1B-ECMWF\_GRIB** | **L1B后向散射系数与ECMWF产品N1D** | **有** |
| **H2D\_SCA\_L1B-H2B\_SCA\_L1B** | **与HY2B交叉** | **有** |
| **H2D\_SCA\_L1B-H2C\_SCA\_L1B** | **与HY2C交叉** | **有** |
| **H2D\_SCA\_L1B-CFOSAT\_SCA\_L1B** | **与中法散射计交叉** | **有** |
| **H2D\_SCA\_L1B-AMAZON** | **亚马逊区域雨林法定标** | **无** |

#### 1.2.1.2输出

表1‑124匹配算法输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 匹配数据集实体文件 | H5 |
| 2 | 结果信息文件 | json |
| 3 | 日志文件 |  |
| 4 | 工作流文件 | .json |

表 1‑125匹配数据集实体文件内容列表

|  |  |  |
| --- | --- | --- |
| 匹配数据集内容序号 | 匹配数据集内容名称 | 维度 |
| 1 | 纬度 | 1D |
| 2 | 经度 | 1D |
| 3 | 观测时间 | 1D |
| 4 | 后向散射系数 | 1D |
| 5 | 模型海面风速 | 1D |
| 6 | 模型海面风向 | 1D |
| 7 | 正演后向散射系数 | 1D |
| 8 | 极化方式 | 1D |
| 9 | 升降轨标识 | 1D |

表1‑126结果信息文件

|  |
| --- |
| {  "satId": "HY-2D",     "sensorId": "SCA",  "status" : 0,     "task\_type" : "H2D\_SCA\_L1B-ECMWF\_GRIB",        #参考excel     "algo\_name" : "H2D\_SCA\_L1B-ECMWF\_GRIB\_MDS",  #参考excel     "algo\_version" : "V01",     "message" : "SUCCESS",     "organization" : "ht",     "programmer" : "毕郁盼",     "responsibler" : "鲍青柳",     "result" : [        {           "filePath" : "/home/eric/untitled2/data/out/H2D\_OPER\_SCA\_L1B\_20200105T001102\_20200106T000415\_031\_0363\_01.h5",# 匹配数据集的名称参考附录           "meta" : {              "aux" : "/home/eric/untitled2/data/GMIL2DATA/\*; ",  "Time\_range(min)" :30,  "Space\_range(km)" :25,              "endTime" : "20210910T235300",              "extent" : "POLYGON ((-179.993576049805 -66.6427536010742 0,-179.993576049805 74.0139312744141 0,179.491775512695 74.0139312744141 0,179.491775512695 -66.6427536010742 0,-179.993576049805 -66.6427536010742 0))",              "main" : "/home/eric/untitled2/data/H2D\_OPER\_SCA\_L1B\_20210910T220723\_20210910T235346\_01466\_dps\_250\_22\_owv.h5",              "productionTime" : "20210922T064036",              "size" : 56761,              "startTime" : "20210910T235346"           },           "typeid" : "H2D\_SCA\_L1B-ECMWF\_GRIB"   #参考excel        }     ]  } |

表 1‑127 工作流文件

|  |
| --- |
| {     "product" : "H2D\_SCA\_L1B-ECMWF\_GRIB",     "step" : [        {           "log" : "read config file success.",           "status" : "0",           "stepName" : "读取工作单",           "stepNo" : "1",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input file success.",           "status" : "0",           "stepName" : "读取配置文件",           "stepNo" : "2",           "timeStamp" : "20211021T074109"        },        {           "log" : "analyse input file.",           "status" : "0",           "stepName" : "解析工作单",           "stepNo" : "3",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input data file success.",           "status" : "0",           "stepName" : "读取卫星数据",           "stepNo" : "4",           "timeStamp" : "20211021T074109"        },        {           "log" : "",           "status" : "255",           "stepName" : "数据处理",           "stepNo" : "5",           "timeStamp" : ""        },        {           "log" : "",           "status" : "255",           "stepName" : "匹配数据输出",           "stepNo" : "6",           "timeStamp" : ""        }     ]  } |

### 1.2.2   HY-2D卫星微波散射计检验匹配算法

#### 1.2.2.1输入

表 1‑128检验匹配算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "matchType": "**H2D\_SCA\_L2B\_DPS-NDBC\_ATM\_TXT**",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "auxFile": [      "/home/eric/untitled2/data/N1D09100000091000001",      "/home/eric/untitled2/data/N1D09100000091030001",      "/home/eric/untitled2/data/N1D09100000091006001",      "/home/eric/untitled2/data/N1D09100000091009001",      "/home/eric/untitled2/data/N1D09101200091012001",      "/home/eric/untitled2/data/N1D09101200091015001",      "/home/eric/untitled2/data/N1D09101200091018001",      "/home/eric/untitled2/data/N1D09101200091021001",      "/home/eric/untitled2/data/N1D09110000091100001"    ],    "resultFolder": "/home/eric/untitled2/data/out/",    "primaryFile": "/home/eric/untitled2/data/H2D\_OPER\_SCA\_L2B\_SF\_20210910T220723\_20210910T235346\_01466.h5"  } |

表1‑129 海动卫星散射计检验matchType组合列表

|  |  |  |
| --- | --- | --- |
| matchType组合 | 说明 | 有无auxFile |
| H2D\_SCA\_L2B\_DPS-ECMWF\_GRIB | **L2B\_DPS风场与ECMWF N1D产品** | **有** |
| H2D\_SCA\_L2B\_DPS-NCEP\_GRIB | **L2B\_DPS风场与NCEP再分析产品** | **有** |
| H2D\_SCA\_L2B\_DPS-NDBC\_ATM\_TXT | **L2B\_DPS风场与NDBC产品** | **有** |
| H2D\_SCA\_L2B\_DPS-TAO | **L2B\_DPS风场与TAO产品** | **有** |
| H2D\_SCA\_L2B\_DPS-ASCATB\_L2\_25KM | **L2B\_DPS风场与ASCAT二级产品** | **有** |
| H2D\_SCA\_L2B\_DPS-H2B\_SCA\_L2B | **L2B\_DPS风场与H2B产品** | **有** |
| H2D\_SCA\_L2B\_DPS-H2C\_SCA\_L2B | **L2B\_DPS风场与H2C产品** | **有** |
| H2D\_SCA\_L2B\_DPS-CFOSAT\_SCA\_L2B | **L2B\_DPS风场与CFOSAT产品** | **有** |
| H2D\_SCA\_L2B\_PWP-ECMWF\_GRIB | **L2B\_PWP风场与ECMWF N1D产品** | **有** |
| H2D\_SCA\_L2B\_PWP-NCEP\_GRIB | **L2B\_PWP风场与NCEP再分析产品** | **有** |
| H2D\_SCA\_L2B\_PWP-NDBC\_ATM\_TXT | **L2B\_PWP风场与NDBC产品** | **有** |
| H2D\_SCA\_L2B\_PWP-TAO | **L2B\_PWP风场与TAO产品** | **有** |
| H2D\_SCA\_L2B\_PWP-ASCATB\_L2\_25KM | **L2B\_PWP风场与ASCAT二级产品** | **有** |
| H2D\_SCA\_L2B\_PWP-H2B\_SCA\_L2B | **L2B\_PWP风场与H2B产品** | **有** |
| H2D\_SCA\_L2B\_PWP-H2C\_SCA\_L2B | **L2B\_PWP风场与H2C产品** | **有** |
| H2D\_SCA\_L2B\_PWP-CFOSAT\_SCA\_L2B | **L2B\_PWP风场与CFOSAT产品** | **有** |

#### 1.2.2.2输出

表1‑130海动卫星微波散射计检验成果列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 匹配数据集 | .h5 |
| 2 | 结果信息文件 | json |
| 3 | 日志文件 |  |
| 4 | 工作流文件 | .json |

表1‑131匹配数据集内容列表

|  |  |  |
| --- | --- | --- |
| 匹配数据集内容序号 | 匹配数据集内容名称 | 维度 |
| 1 | 被检验参数\*的值（\*代表风速、风向） | 1D |
| 2 | 检验参数\*的值 | 1D |
| 3 | 被检验参数的纬度 | 1D |
| 4 | 被检验参数的经度 | 1D |
| 5 | 检验参数的纬度 | 1D |
| 6 | 检验参数的经度 | 1D |
| 7 | 被检验参数的时间 | 1D |

表1‑132结果信息文件

|  |
| --- |
| {  "satId": "HY-2D",   "sensorId": "SCA",     "status" : 0,     "task\_type" : " H2D\_SCA\_L2B\_DPS-ECMWF\_GRIB"     "algo\_name" : " H2D\_SCA\_L2B\_DPS-ECMWF\_GRIB\_MDS",     "algo\_version" : "V01",     "message" : "SUCCESS",     "organization" : "ht",     "programmer" : "毕郁盼",     "responsibler" : "鲍青柳",     "result" : [        {    "filePath" : "/home/eric/untitled2/data/out/ MDS\_H2D\_SCA\_L2B\_DPS\_ECMWF\_SSW\_20160919T105321\_20160919T105325\_20211119T93059.h5",           "meta" : {              "aux" : "/home/eric/untitled2/data/N1D09100000091000001;/home/eric/untitled2/data/N1D09100000091006001;/home/eric/untitled2/data/N1D09100000091009001;/home/eric/untitled2/data/N1D09101200091012001;/home/eric/untitled2/data/N1D09101200091015001;/home/eric/untitled2/data/N1D09101200091018001;/home/eric/untitled2/data/N1D09101200091021001;/home/eric/untitled2/data/N1D09100000091030001; ",              "SST\_range" : [ -3, 35 ],  "Time\_range" :30,  "Space\_range" :25,              "endTime" : "20210910T235300",              "extent" : "POLYGON ((-179.993576049805 -66.6427536010742 0,-179.993576049805 74.0139312744141 0,179.491775512695 74.0139312744141 0,179.491775512695 -66.6427536010742 0,-179.993576049805 -66.6427536010742 0))",              "main" : "/home/eric/untitled2/data/H2D\_OPER\_SCA\_L2B\_OR\_20210910T220723\_20210910T235346\_01466\_dps\_250\_22\_owv.h5",              "parameter" : "owv",              "productionTime" : "20210922T064036",              "size" : 56761,              "startTime" : "20210910T235346"           },           "typeid" : "H2D\_SCA\_L2B\_DPS-ECMWF\_GRIB"        }    {           "filePath" : "/home/eric/untitled2/data/out/ MDS\_H2D\_SCA\_L2B\_DPS\_ECMWF\_SWD\_20160919T105321\_20160919T105325\_20211119T93059.h5",           "meta" : {              "aux" : "/home/eric/untitled2/data/N1D09100000091000001;/home/eric/untitled2/data/N1D09100000091006001;/home/eric/untitled2/data/N1D09100000091009001;/home/eric/untitled2/data/N1D09101200091012001;/home/eric/untitled2/data/N1D09101200091015001;/home/eric/untitled2/data/N1D09101200091018001;/home/eric/untitled2/data/N1D09101200091021001;/home/eric/untitled2/data/N1D09100000091030001; ",              "SST\_range" : [ -3, 35 ],  "Time\_range" :30,  "Space\_range" :25,              "endTime" : "20210910T235300",              "extent" : "POLYGON ((-179.993576049805 -66.6427536010742 0,-179.993576049805 74.0139312744141 0,179.491775512695 74.0139312744141 0,179.491775512695 -66.6427536010742 0,-179.993576049805 -66.6427536010742 0))",              "main" : "/home/eric/untitled2/data/H2D\_OPER\_SCA\_L2B\_OR\_20210910T220723\_20210910T235346\_01466\_dps\_250\_22\_owv.h5",              "parameter" : "owv",              "productionTime" : "20210922T064036",              "size" : 56761,              "startTime" : "20210910T235346"           },           "typeid" : "H2D\_SCA\_L2B\_DPS-ECMWF\_GRIB"        }       ]  } |

表 1‑133 工作流文件（可删减，stepNo需按从1递增的顺序）

|  |
| --- |
| {     "product" : "H2D\_SCA\_L2B\_DPS-ECMWF\_GRIB",     "step" : [        {           "log" : "read config file success.",           "status" : "0",           "stepName" : "读取工作单",           "stepNo" : "1",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input file success.",           "status" : "0",           "stepName" : "读取配置文件",           "stepNo" : "2",           "timeStamp" : "20211021T074109"        },        {           "log" : "analyse input file.",           "status" : "0",           "stepName" : "解析工作单",           "stepNo" : "3",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input data file success.",           "status" : "0",           "stepName" : "读取卫星数据",           "stepNo" : "4",           "timeStamp" : "20211021T074109"        },        {           "log" : "",           "status" : "255",           "stepName" : "数据处理",           "stepNo" : "5",           "timeStamp" : ""        },        {           "log" : "",           "status" : "255",           "stepName" : "匹配数据输出",           "stepNo" : "6",           "timeStamp" : ""        }     ]  } |

### 1.2.3   HY-2D卫星微波散射计定标结果

#### 1.2.3.1   亚马逊雨林法

##### 1.2.3.1.1输入

表 1‑134定标结果计算算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "taskType": "**H2D\_SCA\_Amazon\_Calibration\_CAL**",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "mdss": [      {        "mds\_type": "**H2D\_SCA\_L1B-AMAZON**",        "files": [          "**H2D\_SCA\_L1B\_AMAZON** \_xxxx.h5",          "**H2D\_SCA\_L1B\_AMAZON** \_xxxx.h5",          "**H2D\_SCA\_L1B\_AMAZON** \_xxxx.h5"        ]      }    ],    "resultFolder": "/home/eric/untitled2/data/out/"  "modeType" : "DAILY"#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY  } |

##### 1.2.3.1.2输出

表1‑135定标结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 定标系数结果信息文件 | json |
| 2 | 日志文件 |  |
| 3 | 工作流文件 | .json |

表1‑136定标系数相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 匹配点数量 | 1D |
| 2 | 最小值 | 1D |
| 3 | 最大值 | 1D |
| 4 | 均值 | 1D |
| 5 | 标准差 | 1D |
| 6 | 时间 | 1D |

表1‑137定标系数结果信息文件内容

|  |
| --- |
| {    "satId": "HY-2D",    "sensorId": "SCA",  "level": "L1B",  "status" : 0,  "algo\_name" : "H2D\_SCA\_Amazon\_Calibration\_CAL",  "method\_name" : " CUAF ",#定标方法名   "algo\_version": " V01",  "message": "SUCCESS",  "organization": "ht",  "programmer": "毕郁盼",  "responsibler": "鲍青柳",  "mode\_type" : "DAILY",#将输入json中的内容填过来,包括：DAILY/WEEKLY/MONTH/YEARLY  "start\_time": "20211021T074109",  "end\_time": "20211021T074109",  "produce\_time":"20220307T174104",  "image\_trend\_path":/home/eric/untitled2/data/out/\*.jpg",#趋势图，根据需要画。    "coefs": [      {       "band":"**内波束（HH极化）**",      "incident\_angle":41.48,      "asc\_mean\_refer": 1.0,      "asc\_mean\_obser": 1.0,      "des\_mean\_refer": 1.0,      "des\_mean\_obser": 1.0,      "asc\_bias": 1.0,        "des\_bias": 0.0,        "num\_before": 0.0,#(万个)      "num\_after": 0.0,  "image\_asc\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_asc\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_asc\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"  "image\_des\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_des\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_des\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"    },      {  "band":"**外波束（VV极化）**",      "incident\_angle":41.48,      "asc\_mean\_refer": 1.0,      "asc\_mean\_obser": 1.0,      "des\_mean\_refer": 1.0,      "des\_mean\_obser": 1.0,      "asc\_bias": 1.0,        "des\_bias": 0.0,        "num\_before": 0.0,      "num\_after": 0.0,  "image\_asc\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_asc\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_asc\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"  "image\_des\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_des\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_des\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"    }  …    ]  } |

表 1‑138 工作流程设计表

|  |
| --- |
| {     "product" : "H2D\_SCA\_Amazon\_Calibration\_CAL",     "step" : [        {           "log" : "read config file success.",           "status" : "0",           "stepName" : "读取工作单",           "stepNo" : "1",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input file success.",           "status" : "0",           "stepName" : "读取配置文件",           "stepNo" : "2",           "timeStamp" : "20211021T074109"        },        {           "log" : "analyse input file.",           "status" : "0",           "stepName" : "解析工作单",           "stepNo" : "3",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input data file success.",           "status" : "0",           "stepName" : "读取卫星数据",           "stepNo" : "4",           "timeStamp" : "20211021T074109"        },        {           "log" : "",           "status" : "255",           "stepName" : "数据处理",           "stepNo" : "5",           "timeStamp" : ""        },        {           "log" : "",           "status" : "255",           "stepName" : "匹配数据输出",           "stepNo" : "6",           "timeStamp" : ""        }     ]  } |

#### 1.2.3.2   海洋目标法

##### 1.2.3.2.1输入

表 1‑134定标结果计算算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "taskType": "**H2D\_SCA\_Ocean\_Calibration\_CAL**",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "mdss": [      {        "mds\_type": "**H2D\_SCA\_L1B-ECMWF\_GRIB**",        "files": [          "**H2D\_SCA\_L1B\_ECMWF**\_xxxx.h5",          "**H2D\_SCA\_L1B\_ECMWF**\_xxxx.h5",          "**H2D\_SCA\_L1B\_ECMWF**\_xxxx.h5"        ]      }    ],    "resultFolder": "/home/eric/untitled2/data/out/"  "modeType" : "DAILY"#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY  } |

##### 1.2.3.2.2输出

表1‑139定标结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 定标系数结果信息文件 | json |
| 2 | 日志文件 |  |
| 3 | 工作流文件 | .json |

表1‑140定标系数相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 内波束定标系数 | 1D |
| 2 | 外波束定标系数 | 1D |
| 3 | 匹配点数量 | 1D |
| 4 | 内波束升轨定标系数 | 1D |
| 5 | 内波束降轨定标系数 | 1D |
| 6 | 外波束升轨定标系数 | 1D |
| 7 | 外波束降轨定标系数 | 1D |
| 8 | 内波束后向散射系数标准差 | 1D |
| 9 | 外波束后向散射系数标准差 | 1D |

表1‑141定标系数结果信息文件内容

|  |
| --- |
| {    "satId": "HY-2D",    "sensorId": "SCA",  "level": "L1B",  "status" : 0,  "algo\_name" : "H2D\_SCA\_Ocean\_Calibration\_CAL",  "method\_name" : "CUOT",#定标方法名  "algo\_version": " V01",  "message": "SUCCESS",  "organization": "ht",  "programmer": "毕郁盼",  "responsibler": "鲍青柳",  "mode\_type" : "DAILY",#将输入json中的内容填过来,包括：DAILY/WEEKLY/MONTH/YEARLY  "start\_time": "20211021T074109",  "end\_time": "20211021T074109",  "produce\_time":"20220307T174104",  "image\_trend\_path":/home/eric/untitled2/data/out/\*.jpg",#趋势图，根据需要画。    "coefs": [      {        "band":"**内波束（HH极化）**",      "incident\_angle":41.48,      "asc\_mean\_refer": 1.0,      "asc\_mean\_obser": 1.0,      "des\_mean\_refer": 1.0,      "des\_mean\_obser": 1.0,      "asc\_bias": 1.0,        "des\_bias": 0.0,        "num\_before": 0.0,#(万个)      "num\_after": 0.0,  "image\_asc\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_asc\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_asc\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"  "image\_des\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_des\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_des\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },      {        "band":"**外波束（VV极化）**",      "incident\_angle":41.48,      "asc\_mean\_refer": 1.0,      "asc\_mean\_obser": 1.0,      "des\_mean\_refer": 1.0,      "des\_mean\_obser": 1.0,      "asc\_bias": 1.0,        "des\_bias": 0.0,        "num\_before": 0.0,      "num\_after": 0.0,  "image\_asc\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_asc\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_asc\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"  "image\_des\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_des\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_des\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      }      …    ]  } |

表 1‑142 工作流程设计表

|  |
| --- |
| {     "product" : "H2D\_SCA\_Ocean\_Calibration\_CAL",     "step" : [        {           "log" : "read config file success.",           "status" : "0",           "stepName" : "读取工作单",           "stepNo" : "1",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input file success.",           "status" : "0",           "stepName" : "读取配置文件",           "stepNo" : "2",           "timeStamp" : "20211021T074109"        },        {           "log" : "analyse input file.",           "status" : "0",           "stepName" : "解析工作单",           "stepNo" : "3",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input data file success.",           "status" : "0",           "stepName" : "读取卫星数据",           "stepNo" : "4",           "timeStamp" : "20211021T074109"        },        {           "log" : "",           "status" : "255",           "stepName" : "数据处理",           "stepNo" : "5",           "timeStamp" : ""        },        {           "log" : "",           "status" : "255",           "stepName" : "匹配数据输出",           "stepNo" : "6",           "timeStamp" : ""        }     ]  } |

#### 1.2.3.3   星星交叉法

##### 1.2.3.3.1输入

表 1‑134定标结果计算算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "taskType": "**H2D\_SCA\_Inter\_Calibration\_CAL**",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "mdss": [      {        "mds\_type": " **H2D\_SCA\_L1B-ECMWF\_GRIB**",        "files": [          "**H2D\_SCA\_L1B\_ECMWF**\_xxxx.h5",          "**H2D\_SCA\_L1B\_ECMWF**\_xxxx.h5",          "**H2D\_SCA\_L1B\_ECMWF**\_xxxx.h5"        ]      },{        "mds\_type": " **H2D\_SCA\_L1B-H2B\_SCA\_L1B**",        "files": [          "**H2D\_SCA\_L1B\_H2B\_SCA\_L1B**\_xxxx.h5",          " **H2D\_SCA\_L1B\_H2B\_SCA\_L1B**\_xxxx.h5",          " **H2D\_SCA\_L1B\_H2B\_SCA\_L1B**\_xxxx.h5"        ]      },{        "mds\_type": " **H2D\_SCA\_L1B-H2C\_SCA\_L1B**",        "files": [          "**H2D\_SCA\_L1B\_H2C\_SCA\_L1B**\_xxxx.h5",          " **H2D\_SCA\_L1B\_H2C\_SCA\_L1B**\_xxxx.h5",          " **H2D\_SCA\_L1B\_H2C\_SCA\_L1B**\_xxxx.h5"        ]      },{        "mds\_type": " **H2D\_SCA\_L1B-CFOSAT\_SCA\_L1B**",        "files": [          "**H2D\_SCA\_L1B\_CFOSAT\_SCA\_L1B**\_xxxx.h5",          " **H2D\_SCA\_L1B\_CFOSAT\_SCA\_L1B**\_xxxx.h5",          " **H2D\_SCA\_L1B\_CFOSAT\_SCA\_L1B**\_xxxx.h5"        ]      }    ],    "resultFolder": "/home/eric/untitled2/data/out/"  "mode\_type" : "DAILY"#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY  } |

##### 1.2.3.3.2输出

表1‑139定标结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 定标系数结果信息文件 | json |
| 2 | 日志文件 |  |
| 3 | 工作流文件 | .json |

表1‑140定标系数相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 内波束定标系数 | 1D |
| 2 | 外波束定标系数 | 1D |
| 3 | 匹配点数量 | 1D |
| 4 | 内波束升轨定标系数 | 1D |
| 5 | 内波束降轨定标系数 | 1D |
| 6 | 外波束升轨定标系数 | 1D |
| 7 | 外波束降轨定标系数 | 1D |
| 8 | 内波束后向散射系数标准差 | 1D |
| 9 | 外波束后向散射系数标准差 | 1D |

表1‑141定标系数结果信息文件内容

|  |
| --- |
| {    "satId": "HY-2D",    "sensorId": "SCA",  "level": "L1B",  "status" : 0,  "algo\_name" : "H2D\_SCA\_ECMWF\_Inter\_Calibration\_CAL",  "method\_name" : "CCS",#定标方法名  "algo\_version": " V01",  "message": "SUCCESS",  "organization": "ht",  "programmer": "毕郁盼",  "responsibler": "鲍青柳",  "mode\_type" : "DAILY",#将输入json中的内容填过来,包括：DAILY/WEEKLY/MONTH/YEARLY  "start\_time": "20211021T074109",  "end\_time": "20211021T074109",  "produce\_time":"20220307T174104",  "image\_trend\_path:"/home/eric/untitled2/data/out/\*.jpg",#趋势图，根据需要画。    "coefs": [      {      "band":"**内波束（HH极化）**",      "incident\_angle":41.48,      "asc\_mean\_refer": 1.0,      "asc\_mean\_obser": 1.0,      "des\_mean\_refer": 1.0,      "des\_mean\_obser": 1.0,      "asc\_bias": 1.0,        "des\_bias": 0.0,        "num\_before": 0.0,#(万个)      "num\_after": 0.0,  "image\_asc\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_asc\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_asc\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"  "image\_des\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_des\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_des\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      }      {        "band":"**外波束（VV极化）**",      "incident\_angle":41.48,      "asc\_mean\_refer": 1.0,      "asc\_mean\_obser": 1.0,      "des\_mean\_refer": 1.0,      "des\_mean\_obser": 1.0,      "asc\_bias": 1.0,        "des\_bias": 0.0,        "num\_before": 0.0,      "num\_after": 0.0,  "image\_asc\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_asc\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_asc\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"  "image\_des\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_des\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_des\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      }    …    ]  } |

表 1‑142 工作流程设计表

|  |
| --- |
| {     "product" : " H2D\_SCA\_Inter\_Calibration\_CAL",     "step" : [        {           "log" : "read config file success.",           "status" : "0",           "stepName" : "读取工作单",           "stepNo" : "1",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input file success.",           "status" : "0",           "stepName" : "读取配置文件",           "stepNo" : "2",           "timeStamp" : "20211021T074109"        },        {           "log" : "analyse input file.",           "status" : "0",           "stepName" : "解析工作单",           "stepNo" : "3",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input data file success.",           "status" : "0",           "stepName" : "读取卫星数据",           "stepNo" : "4",           "timeStamp" : "20211021T074109"        },        {           "log" : "",           "status" : "255",           "stepName" : "数据处理",           "stepNo" : "5",           "timeStamp" : ""        },        {           "log" : "",           "status" : "255",           "stepName" : "匹配数据输出",           "stepNo" : "6",           "timeStamp" : ""        }     ]  } |

### 1.2.4   HY-2D卫星微波散射计检验结果

#### 1.2.4.1   H2D\_SCA\_L2B\_DPS产品

##### 1.2.4.1.1输入

表 1‑143定标结果计算算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "taskType": "**H2D\_SCA\_L2B\_DPS\_VAL**",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "mdss": [      {        "mds\_type": "**H2D\_SCA\_L2B\_DPS-ECMWF\_GRIB**",        "files": [          " **H2D\_SCA\_L2B\_ECMWF**\_xxxx.h5",          " **H2D\_SCA\_L2B\_ECMWF**\_xxxx.h5",          " **H2D\_SCA\_L2B\_ECMWF**\_xxxx.h5"        ]      },      {        "mds\_type": "**H2D\_SCA\_L2B\_DPS-NCEP\_GRIB**",        "files": [          " **H2D\_SCA\_L2B\_NCEP**\_xxxx.h5",          " **H2D\_SCA\_L2B\_NCEP**\_xxxx.h5",          " **H2D\_SCA\_L2B\_NCEP**\_xxxx.h5"        ]      }…….省略参考excel    ],    "resultFolder": "/home/eric/untitled2/data/out/"  "mode\_type" : "DAILY"#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY  } |

##### 1.2.4.1.2输出

表1‑144检验结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 检验结果信息文件 | json |
| 2 | 日志文件 |  |
| 3 | 工作流文件 | .json |

表1‑145定标系数相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 匹配点数量 | 1D |
| 2 | 平均偏差 | 1D |
| 3 | 绝对偏差 | 1D |
| 4 | 标准差 | 1D |
| 5 | 均方根误差 | 1D |
| 6 | 相关系数 | 1D |

表1‑146检验结果信息文件内容

|  |
| --- |
| {    "satId": "HY-2D",    "sensorId": "SCA",    "level": "L2B",  "status" : 0,  "algo\_name": " H2D\_SCA\_L2B\_DPS\_VAL",  "method\_name" : "L2B\_DPS\_VAL",#检验方法名  "algo\_version": " V01",  "message": "SUCCESS",  "organization": "ht",  "programmer": "毕郁盼",  "responsibler": "鲍青柳",  "mode\_type" : "DAILY",#将输入json中的内容填过来,包括：DAILY/WEEKLY/MONTH/YEARLY  "start\_time": "20211021T074109",  "end\_time": "20211021T074109",  "produce\_time":"20220307T174104",    "result\_SSW": [      {  "aux\_type":"ECMWF",        "resolution": "RES0",        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },  {  "aux\_type":"CFOSAT",        "resolution": "RES0",        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },      …   ]  "result\_SWD": [      {  "aux\_type":"ECMWF",        "resolution": "RES0",        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },  {  "aux\_type":"CFOSAT",        "resolution": "RES0",        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },  …   ]    } |

表 1‑147 工作流程设计表

|  |
| --- |
| {     "product" : " H2D\_SCA\_L2B\_DPS\_VAL",     "step" : [        {           "log" : "read config file success.",           "status" : "0",           "stepName" : "读取工作单",           "stepNo" : "1",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input file success.",           "status" : "0",           "stepName" : "读取配置文件",           "stepNo" : "2",           "timeStamp" : "20211021T074109"        },        {           "log" : "analyse input file.",           "status" : "0",           "stepName" : "解析工作单",           "stepNo" : "3",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input data file success.",           "status" : "0",           "stepName" : "读取卫星数据",           "stepNo" : "4",           "timeStamp" : "20211021T074109"        },        {           "log" : "",           "status" : "255",           "stepName" : "数据处理",           "stepNo" : "5",           "timeStamp" : ""        },        {           "log" : "",           "status" : "255",           "stepName" : "匹配数据输出",           "stepNo" : "6",           "timeStamp" : ""        }     ]  } |

#### 1.2.4.2   H2D\_SCA\_L2B\_PWP产品

##### 1.2.4.2.1输入

表 1‑143定标结果计算算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "taskType": "**H2D\_SCA\_L2B\_PWP\_VAL**",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "mdss": [      {        "mds\_type": "**H2D\_SCA\_L2B\_PWP-ECMWF\_GRIB**",        "files": [          " **H2D\_SCA\_L2B\_ECMWF**\_xxxx.h5",          " **H2D\_SCA\_L2B\_ECMWF**\_xxxx.h5",          " **H2D\_SCA\_L2B\_ECMWF**\_xxxx.h5"        ]      },      {        "mds\_type": "**H2D\_SCA\_L2B\_PWP-NCEP\_GRIB**",        "files": [          " **H2D\_SCA\_L2B\_NCEP**\_xxxx.h5",          " **H2D\_SCA\_L2B\_NCEP**\_xxxx.h5",          " **H2D\_SCA\_L2B\_NCEP**\_xxxx.h5"        ]      }…….省略参考excel    ],    "resultFolder": "/home/eric/untitled2/data/out/"  "mode\_type" : "DAILY"#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY  } |

##### 1.2.4.2.2输出

表1‑144检验结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 检验结果信息文件 | json |
| 2 | 日志文件 |  |
| 3 | 工作流文件 | .json |

表1‑145定标系数相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 匹配点数量 | 1D |
| 2 | 平均偏差 | 1D |
| 3 | 绝对偏差 | 1D |
| 4 | 标准差 | 1D |
| 5 | 均方根误差 | 1D |
| 6 | 相关系数 | 1D |

表1‑146检验结果信息文件内容

|  |
| --- |
| {    "satId": "HY-2D",    "sensorId": "SCA",    "level": "L2B",  "status" : 0,  "algo\_name": " H2D\_SCA\_L2B\_PWP\_VAL",  "method\_name" : "L2B\_PWP\_VAL",#检验方法名    "algo\_version": " V01",  "message": "SUCCESS",  "organization": "ht",  "programmer": "毕郁盼",  "responsibler": "鲍青柳",  "mode\_type" : "DAILY",#将输入json中的内容填过来,包括：DAILY/WEEKLY/MONTH/YEARLY  "start\_time": "20211021T074109",  "end\_time": "20211021T074109",  "produce\_time":"20220307T174104",  "result\_SSW": [      {  "aux\_type":"ECMWF",        "resolution": "RES0",        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },  {  "aux\_type":"CFOSAT",        "resolution": "RES0",        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },      …   ]  "result\_SWD": [      {  "aux\_type":"ECMWF",        "resolution": "RES0",        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },  {  "aux\_type":"CFOSAT",        "resolution": "RES0",        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },      …   ]    } |

表 1‑147 工作流程设计表

|  |
| --- |
| {     "product" : " H2D\_SCA\_L2B\_PWP\_VAL",     "step" : [        {           "log" : "read config file success.",           "status" : "0",           "stepName" : "读取工作单",           "stepNo" : "1",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input file success.",           "status" : "0",           "stepName" : "读取配置文件",           "stepNo" : "2",           "timeStamp" : "20211021T074109"        },        {           "log" : "analyse input file.",           "status" : "0",           "stepName" : "解析工作单",           "stepNo" : "3",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input data file success.",           "status" : "0",           "stepName" : "读取卫星数据",           "stepNo" : "4",           "timeStamp" : "20211021T074109"        },        {           "log" : "",           "status" : "255",           "stepName" : "数据处理",           "stepNo" : "5",           "timeStamp" : ""        },        {           "log" : "",           "status" : "255",           "stepName" : "匹配数据输出",           "stepNo" : "6",           "timeStamp" : ""        }     ]  } |

## 1.3    HY-2D校正辐射计（CMR）

### 1.3.1   HY-2D校正辐射计定标匹配算法

#### 1.3.1.1 输入

**\*说明：**每个匹配程序的输入为以下表格1-1中的.json文件（系统生成），json文件中包含了匹配程序所需各种数据或路径的绝对路径。各载荷需要提供matchType，代表海洋卫星数据与匹配参考源数据，如表1-2。

表 1‑92定标匹配算法输入[[M帐1]](NULL)

|  |
| --- |
| {    "resultLogFile ": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "matchType ": "**H2D\_CMR\_L1B-NCEP\_GRIB**",    "resultFlowFile ": "/home/eric/untitled2/data/out/1111.json",    "auxFile ": [      "/home/eric/untitled2/data/N1D09100000091000001",      "/home/eric/untitled2/data/N1D09100000091030001",      "/home/eric/untitled2/data/N1D09100000091006001",      "/home/eric/untitled2/data/N1D09100000091009001",      "/home/eric/untitled2/data/N1D09101200091012001",      "/home/eric/untitled2/data/N1D09101200091015001",      "/home/eric/untitled2/data/N1D09101200091018001",      "/home/eric/untitled2/data/N1D09101200091021001",      "/home/eric/untitled2/data/N1D09110000091100001"    ],    "resultFolder ": "/home/eric/untitled2/data/out/",    "primaryFile ": "/home/eric/untitled2/data/H2D\_OPER\_CMR\_L1B\_20210910T220723\_20210910T235346\_01466.h5"  } |

表1‑93 输入json说明

|  |  |
| --- | --- |
| 输入Json文件内容 | 说明 |
| Json文件 | 这个json文件为调度系统生成，作为算法的输入，指定了所需海洋卫星数据及辅助数据的路径，以及成果输出的路径等内容。 |
| resultLogFile | 日志信息文件，根据给定的路径和名称，自己创建，并填写日志信息 |
| resultJsonFile | 生成结果信息文件，即word中对应的结果信息文件表，自己创建，并填写内容 |
| matchType | 唯一标识，代表当前海洋卫星数据与哪种辅助数据进行匹配，word中对应的matchType组合列表 |
| resultFlowFile | 工作流文件，不需自己创建，打开修改内容 |
| auxFile | 待使用的辅助数据列表，调度系统会根据海洋卫星数据进行粗匹配，得到所有符合的辅助数据，文件绝对路径。 |
| resultFolder | 匹配数据集以及其他生成文件的输出路径 |
| primaryFile | 待匹配的海洋卫星数据 |

表1‑94 海动卫星辐射计定标matchType组合列表

|  |  |  |
| --- | --- | --- |
| matchType组合 | 说明 | 有无auxFile |
| H2D\_CMR\_L1B-JASON3\_IGDR | **亮温与JASON3-IGDR产品匹配** | **有** |
| H2D\_CMR\_L1B-NCEP\_GRIB | **亮温与NCEP再分析产品匹配** | **有** |
| H2D\_CMR\_L1B-Coldest | **搜索最冷亮温** | **无** |

#### 1.3.1.2 输出

**\*说明：**每个匹配程序的输出如表1-3，包括匹配数据集实体文件（h5格式，自创建），结果信息文件（json格式，自创建），另外还包括日志文件（自创建）和工作流文件（系统创建，根据路径修改其中内容）。其中实体文件如表1-4，每个载荷需列出各自需要存储的匹配数据集。结果信息文件按各自载荷修改。

表1‑95匹配算法输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 匹配数据集实体文件 | H5 |
|  | 结果信息文件 | json |
|  | 日志文件 |  |
|  | 工作流文件 | .json |

表 1‑96匹配数据集实体文件内容列表

|  |  |  |
| --- | --- | --- |
| 匹配数据集内容序号 | 匹配数据集内容名称 | 维度 |
| 1 | 纬度 | 1D |
| 2 | 经度 | 1D |
| 3 | ORI\_TB（原始亮温） | 1D |
| 4 | REF\_TB（参考亮温） | 1D |

表1‑97结果信息文件[结果信息 .json样例：（黄底 为必须项）]

|  |
| --- |
| {  "satId": "HY-2D",     "sensorId": "CMR",  "status" : 0,     "task\_type" : " H2D\_CMR\_L1B-NCEP\_GRIB ",#参考excel     "algo\_name" : " H2D\_CMR\_L1B-NCEP\_GRIB\_MDS ",#参考excel     "algo\_version" : "V01",     "message" : "SUCCESS",     "organization" : "ht",     "programmer" : "孟雨晴",     "responsibler" : "王士帅",     "result" : [        {           "filePath" : "/home/eric/untitled2/data/out/H2D\_OPER\_CMR\_L2A\_TB\_20200105T001102\_20200106T000415\_031\_0363\_01.h5",# 匹配数据集的名称参考附录           "meta" : {              "aux" : "/home/eric/untitled2/data/**JASON3-IGDR**/\*; ",  "Time\_range(min)" :30,  "Space\_range(km)" :25,              "endTime" : "20210910T235300",              "extent" : "POLYGON ((-179.993576049805 -66.6427536010742 0,-179.993576049805 74.0139312744141 0,179.491775512695 74.0139312744141 0,179.491775512695 -66.6427536010742 0,-179.993576049805 -66.6427536010742 0))",              "main" : "/home/eric/untitled2/data/H2E\_OPER\_SMR\_L2A\_TB\_20210910T220723\_20210910T235346\_01466\_dps\_250\_22\_owv.h5",              "productionTime" : "20210922T064036",              "size" : 56761,              "startTime" : "20210910T235346"           },           "typeid" : "H2D\_CMR\_L1B-NCEP\_GRIB"        }     ]  } |

表 1‑98 工作流文件（可删减，stepNo需按从1递增的顺序）

|  |
| --- |
| {     "product" : "H2D\_CMR\_L1B-NCEP\_GRIB",     "step" : [        {           "log" : "read config file success.",           "status" : "0",           "stepName" : "读取工作单",           "stepNo" : "1",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input file success.",           "status" : "0",           "stepName" : "读取配置文件",           "stepNo" : "2",           "timeStamp" : "20211021T074109"        },        {           "log" : "analyse input file.",           "status" : "0",           "stepName" : "解析工作单",           "stepNo" : "3",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input data file success.",           "status" : "0",           "stepName" : "读取卫星数据",           "stepNo" : "4",           "timeStamp" : "20211021T074109"        },        {           "log" : "",           "status" : "255",           "stepName" : "数据处理",           "stepNo" : "5",           "timeStamp" : ""        },        {           "log" : "",           "status" : "255",           "stepName" : "匹配数据输出",           "stepNo" : "6",           "timeStamp" : ""        }     ]  } |

### 1.3.2   HY-2D校正辐射计检验匹配算法

#### 1.3.2.1 输入

表 1‑99检验匹配算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "matchType": "**H2D\_CMR\_L2B-ECMWF\_GRIB**",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "auxFile": [      "/home/eric/untitled2/data/N1D09100000091000001",      "/home/eric/untitled2/data/N1D09100000091030001",      "/home/eric/untitled2/data/N1D09100000091006001",      "/home/eric/untitled2/data/N1D09100000091009001",      "/home/eric/untitled2/data/N1D09101200091012001",      "/home/eric/untitled2/data/N1D09101200091015001",      "/home/eric/untitled2/data/N1D09101200091018001",      "/home/eric/untitled2/data/N1D09101200091021001",      "/home/eric/untitled2/data/N1D09110000091100001"    ],    "resultFolder": "/home/eric/untitled2/data/out/",    "primaryFile": "/home/eric/untitled2/data/H2D\_OPER\_CMR\_L2B\_SF\_20210910T220723\_20210910T235346\_01466.h5"  } |

表1‑100 海动卫星辐射计检验matchType组合列表

|  |  |  |
| --- | --- | --- |
| matchType组合 | 说明 | 有无auxFile |
| **H2D\_CMR\_L2B-TAO** | **L2B与TAO产品** | **有** |
| **H2D\_CMR\_L2B-NDBC\_ATM\_TXT** | **L2B与NDBC产品** | **有** |
| **H2D\_CMR\_L2B-NCEP\_GRIB** | **L2B与NCEP再分析产品** | **有** |
| **H2D\_CMR\_L2B-ECMWF\_GRIB** | **L2B与ECMWF预报产品** | **有** |
| **H2D\_CMR\_L2B-SEN3A\_SRAL** | **L2B与SEN3A-SRAL产品** | **有** |
| **H2D\_CMR\_L2B-SEN3B\_SRAL** | **L2B与SEN3B-SRAL产品** | **有** |
| **H2D\_CMR\_L2B-JASON3\_IGDR** | **L2B与Jason3-IGDR产品** | **有** |

#### 1.3.2.2 输出

表1‑101海动卫星微波辐射计检验成果列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 匹配数据集 | .h5 |
| 2 | 结果信息文件 | json |
| 3 | 日志文件 |  |
| 4 | 工作流文件 | .json |

表 1‑102匹配数据集内容列表

|  |  |  |
| --- | --- | --- |
| 匹配数据集内容序号 | 匹配数据集内容名称 | 维度 |
| 1 | 被检验参数\*的值（\*代表海温、风速、大气水汽含量、云液水含量、土壤湿度、海冰密集度、降雨率） | 1D |
| 2 | 检验参数\*的值 | 1D |
| 3 | 被检验参数的纬度 | 1D |
| 4 | 被检验参数的经度 | 1D |
| 5 | 检验参数的纬度 | 1D |
| 6 | 检验参数的经度 | 1D |

表1‑103结果信息文件[结果信息 .json样例：（黄底 为必须项）]

|  |
| --- |
| {  "satId": "HY-2D",     "sensorId": "CMR",     "status" : 0,     "task\_type" : " **H2D\_CMR\_L2B-ECMWF\_GRIB** "     "algo\_name" : " H2D\_CMR\_L2B-ECMWF\_GRIB\_MDS ",     "algo\_version" : "V01",     "message" : "SUCCESS",     "organization" : "ht",     "programmer" : "李峻州",     "responsibler" : "王士帅",     "result" : [        {           "filePath" : "/home/eric/untitled2/data/out/H2D\_OPER\_CMR\_L2B\_SF\_20200105T001102\_20200106T000415\_031\_0363\_01.h5",           "meta" : {              "aux" : "/home/eric/untitled2/data/N1D09100000091000001;/home/eric/untitled2/data/N1D09100000091006001;/home/eric/untitled2/data/N1D09100000091009001;/home/eric/untitled2/data/N1D09101200091012001;/home/eric/untitled2/data/N1D09101200091015001;/home/eric/untitled2/data/N1D09101200091018001;/home/eric/untitled2/data/N1D09101200091021001;/home/eric/untitled2/data/N1D09100000091030001; ",              "SST\_range" : [ -3, 35 ],  "Time\_range" :30,  "Space\_range" :25,              "endTime" : "20210910T235300",              "extent" : "POLYGON ((-179.993576049805 -66.6427536010742 0,-179.993576049805 74.0139312744141 0,179.491775512695 74.0139312744141 0,179.491775512695 -66.6427536010742 0,-179.993576049805 -66.6427536010742 0))",              "main" : "/home/eric/untitled2/data/H2D\_OPER\_CMR\_L2B\_OR\_20210910T220723\_20210910T235346\_01466\_dps\_250\_22\_SST.h5",              "parameter" : "SST",              "productionTime" : "20210922T064036",              "size" : 56761,              "startTime" : "20210910T235346"           },           "typeid" : " **H2D\_CMR\_L2B-ECMWF\_GRIB** "        }    {           "filePath" : "/home/eric/untitled2/data/out/H2D\_OPER\_CMR\_L2B\_SF\_20200105T001102\_20200106T000415\_031\_0363\_01.h5",           "meta" : {              "aux" : "/home/eric/untitled2/data/N1D09100000091000001;/home/eric/untitled2/data/N1D09100000091006001;/home/eric/untitled2/data/N1D09100000091009001;/home/eric/untitled2/data/N1D09101200091012001;/home/eric/untitled2/data/N1D09101200091015001;/home/eric/untitled2/data/N1D09101200091018001;/home/eric/untitled2/data/N1D09101200091021001;/home/eric/untitled2/data/N1D09100000091030001; ",              "SST\_range" : [ -3, 35 ],  "Time\_range" :30,  "Space\_range" :25,              "endTime" : "20210910T235300",              "extent" : "POLYGON ((-179.993576049805 -66.6427536010742 0,-179.993576049805 74.0139312744141 0,179.491775512695 74.0139312744141 0,179.491775512695 -66.6427536010742 0,-179.993576049805 -66.6427536010742 0))",              "main" : "/home/eric/untitled2/data/H2D\_OPER\_CMR\_L2B\_OR\_20210910T220723\_20210910T235346\_01466\_dps\_250\_22\_SST.h5",              "parameter" : "SST",              "productionTime" : "20210922T064036",              "size" : 56761,              "startTime" : "20210910T235346"           },           "typeid" : " **H2D\_CMR\_L2B-ECMWF\_GRIB** "        }       ]  } |

表 1‑104 工作流文件（可删减，stepNo需按从1递增的顺序）

|  |
| --- |
| {     "product" : " **H2D\_CMR\_L2B-ECMWF\_GRIB** ",     "step" : [        {           "log" : "read config file success.",           "status" : "0",           "stepName" : "读取工作单",           "stepNo" : "1",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input file success.",           "status" : "0",           "stepName" : "读取配置文件",           "stepNo" : "2",           "timeStamp" : "20211021T074109"        },        {           "log" : "analyse input file.",           "status" : "0",           "stepName" : "解析工作单",           "stepNo" : "3",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input data file success.",           "status" : "0",           "stepName" : "读取卫星数据",           "stepNo" : "4",           "timeStamp" : "20211021T074109"        },        {           "log" : "",           "status" : "255",           "stepName" : "数据处理",           "stepNo" : "5",           "timeStamp" : ""        },        {           "log" : "",           "status" : "255",           "stepName" : "匹配数据输出",           "stepNo" : "6",           "timeStamp" : ""        }     ]  } |

### 1.3.3   HY-2D校正辐射计定标结果

#### 1.3.3.1   星星交叉法

##### 1.3.3.1.1输入

**\*说明：**结果计算程序的输入为以下表格中的.json文件，json文件中包含了计算定标结果所需的匹配方法、匹配数据集实体文件等的绝对路径。

表 1‑105定标结果计算算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "taskType": " **H2D\_CMR\_Inter\_Calibration\_CAL** ",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "mdss": [      {        "mds\_type": " **H2D\_CMR\_L1B-JASON3\_IGDR** ",        "files": [          "H2D\_CMR\_L1B\_JASON3\_xxxx.h5",          "H2D\_CMR\_L1B\_JASON3\_xxxx.h5",          "H2D\_CMR\_L1B\_JASON3\_xxxx.h5"        ]      }  ],    "resultFolder": "/home/eric/untitled2/data/out/"  "mode\_type" : "DAILY"#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY  } |

##### 1.3.3.1.2输出

表1‑106定标结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 定标系数结果信息文件 | json |
| 2 | 日志文件 |  |
| 3 | 工作流文件 | .json |

表 1‑107定标系数相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 定标系数a | 1D |
| 2 | 定标系数b | 1D |
| 3 | 匹配点数量 | 1D |
| 4 | 定标前相关系数 | 1D |
| 5 | 定标后相关系数 | 1D |
| 6 | 定标前标准差 | 1D |
| 7 | 定标前均方根误差 | 1D |
| 8 | 定标后标准差 | 1D |
| 9 | 定标后均方根误差 | 1D |

表1‑108定标系数结果信息文件内容[.json样例： （黄底 为必须项）]

|  |
| --- |
| {    "satId": "HY-2D",    "sensorId": "CMR",  "level": "L1B",  "status" : 0,  "algo\_name" : " H2D\_CMR\_Inter\_Calibration\_CAL",  "method\_name" : "CCS",#定标方法名    "algo\_version": " V01",  "message": "SUCCESS",  "organization": "ht",  "programmer": "孟雨晴",  "responsibler": "王士帅",  "mode\_type" : "DAILY",#将输入json中的内容填过来,包括：DAILY/WEEKLY/MONTH/YEARLY  "start\_time": "20211021T074109",  "end\_time": "20211021T074109",  "produce\_time":"20220307T174104", "image\_trend\_path"：/home/eric/untitled2/data/out/\*.jpg",#趋势图，根据需要画。    "coefs": [      {        "band": ’18.7’,        "slope\_a": 1.0,        "offset\_b": 0.0,        "num": 1.0,        "coef": 0.0,        "bef\_std": 0.0,        "aft\_std": 1.0,        "bef\_rms": 0.0,        "aft\_rms": 1.0,        "bef\_bias": 0.0,        "aft\_bias": 1.0, "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },{        "band": ’23.8’,        "slope\_a": 1.0,        "offset\_b": 0.0,        "num": 1.0,        "coef": 0.0,        "bef\_std": 0.0,        "aft\_std": 1.0,        "bef\_rms": 0.0,        "aft\_rms": 1.0,        "bef\_bias": 0.0,        "aft\_bias": 1.0, "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },        {        "band": ’37’,        "slope\_a": 1.0,        "offset\_b": 0.0,        "num": 1.0,        "coef": 0.0,        "bef\_std": 0.0,        "aft\_std": 1.0,        "bef\_rms": 0.0,        "aft\_rms": 1.0,        "bef\_bias": 0.0,        "aft\_bias": 1.0, "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      }      …    ]  } |

表 1‑109 工作流程设计表（可删减，stepNo需按从1递增的顺序）

|  |
| --- |
| {     "product" : " H2D\_CMR\_Inter\_Calibration\_CAL ",     "step" : [        {           "log" : "read config file success.",           "status" : "0",           "stepName" : "读取工作单",           "stepNo" : "1",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input file success.",           "status" : "0",           "stepName" : "读取配置文件",           "stepNo" : "2",           "timeStamp" : "20211021T074109"        },        {           "log" : "analyse input file.",           "status" : "0",           "stepName" : "解析工作单",           "stepNo" : "3",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input data file success.",           "status" : "0",           "stepName" : "读取卫星数据",           "stepNo" : "4",           "timeStamp" : "20211021T074109"        },        {           "log" : "",           "status" : "255",           "stepName" : "数据处理",           "stepNo" : "5",           "timeStamp" : ""        },        {           "log" : "",           "status" : "255",           "stepName" : "匹配数据输出",           "stepNo" : "6",           "timeStamp" : ""        }     ]  } |

#### 1.3.3.2   海洋目标法

##### 1.3.3.2.1输入

表 1‑105定标结果计算算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "taskType": " **H2D\_CMR\_Ocean\_Calibration\_CAL** ",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "mdss": [      {        "mds\_type": " **H2D\_CMR\_L1B-NCEP\_GRIB** ",        "files": [          " H2D\_CMR\_L1B\_NCEP\_xxxx.h5",          "H2D\_CMR\_L1B\_NCEP\_xxxx.h5",          "H2D\_CMR\_L1B\_NCEP\_xxxx.h5"        ]      }  ],    "resultFolder": "/home/eric/untitled2/data/out/"  "mode\_type" : "DAILY"#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY  } |

##### 1.3.3.2.2输出

表1‑106定标结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 定标系数结果信息文件 | json |
| 2 | 日志文件 |  |
| 3 | 工作流文件 | .json |

表 1‑107定标系数相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 定标系数a | 1D |
| 2 | 定标系数b | 1D |
| 3 | 匹配点数量 | 1D |
| 4 | 定标前相关系数 | 1D |
| 5 | 定标后相关系数 | 1D |
| 6 | 定标前标准差 | 1D |
| 7 | 定标前均方根误差 | 1D |
| 8 | 定标后标准差 | 1D |
| 9 | 定标后均方根误差 | 1D |

表1‑108定标系数结果信息文件内容[.json样例： （黄底 为必须项）]

|  |
| --- |
| *// (适用于GMI（星星交叉法）或者NCEP（海洋目标法）)*  {    "satId": "HY-2D",    "sensorId": "CMR",   "level": "L1B",  "status" : 0,  "algo\_name" : " H2D\_CMR\_Ocean\_Calibration\_CAL",  "method\_name" : "CUOT",#定标方法名  "algo\_version": " V01",  "message": "SUCCESS",  "organization": "ht",  "programmer": "孟雨晴",  "responsibler": "王士帅",  "mode\_type" : "DAILY",#将输入json中的内容填过来,包括：DAILY/WEEKLY/MONTH/YEARLY  "start\_time": "20211021T074109",  "end\_time": "20211021T074109",  "produce\_time":"20220307T174104",  "image\_trend\_path"：/home/eric/untitled2/data/out/\*.jpg",#趋势图，根据需要画。    "coefs": [      {        "band": ’18.7’,        "slope\_a": 1.0,        "offset\_b": 0.0,        "num": 1.0,        "coef": 0.0,        "bef\_std": 0.0,        "aft\_std": 1.0,        "bef\_rms": 0.0,        "aft\_rms": 1.0,        "bef\_bias": 0.0,        "aft\_bias": 1.0, "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },      {        "band": ’37’,        "slope\_a": 1.0,        "offset\_b": 0.0,        "num": 1.0,        "coef": 0.0,        "bef\_std": 0.0,        "aft\_std": 1.0,        "bef\_rms": 0.0,        "aft\_rms": 1.0,        "bef\_bias": 0.0,        "aft\_bias": 1.0, "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      }      …    ]  } |

表 1‑109 工作流程设计表（可删减，stepNo需按从1递增的顺序）

|  |
| --- |
| {     "product" : " H2D\_CMR\_Ocean\_Calibration\_CAL ",     "step" : [        {           "log" : "read config file success.",           "status" : "0",           "stepName" : "读取工作单",           "stepNo" : "1",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input file success.",           "status" : "0",           "stepName" : "读取配置文件",           "stepNo" : "2",           "timeStamp" : "20211021T074109"        },        {           "log" : "analyse input file.",           "status" : "0",           "stepName" : "解析工作单",           "stepNo" : "3",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input data file success.",           "status" : "0",           "stepName" : "读取卫星数据",           "stepNo" : "4",           "timeStamp" : "20211021T074109"        },        {           "log" : "",           "status" : "255",           "stepName" : "数据处理",           "stepNo" : "5",           "timeStamp" : ""        },        {           "log" : "",           "status" : "255",           "stepName" : "匹配数据输出",           "stepNo" : "6",           "timeStamp" : ""        }     ]  } |

#### 1.3.3.3   最冷目标替代法

##### 1.3.3.3.1输入

表 1‑105定标结果计算算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "taskType": " **H2D\_CMR\_Cold\_Calibration\_CAL**",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "mdss": [      {        "mds\_type": " **H2D\_CMR\_L1B-Coldest** ",        "files": [          " H2D\_CMR\_L1B\_Coldest\_xxxx.h5",          " H2D\_CMR\_L1B\_Coldest\_xxxx.h5",          " H2D\_CMR\_L1B\_Coldest\_xxxx.h5"        ]      }       ],    "resultFolder": "/home/eric/untitled2/data/out/"  "mode\_type" : "DAILY"#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY  } |

##### 1.3.3.3.2输出

表1‑110定标结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 定标系数结果信息文件 | json |
| 2 | 日志文件 |  |
| 3 | 工作流文件 | .json |

表 1‑111定标系数相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 匹配点数量 | 1D |
| 2 | 最小值 | 1D |
| 3 | 最大值 | 1D |
| 4 | 均值 | 1D |
| 5 | 标准差 | 1D |
| 6 | 5%最冷值 | 1D |
| 7 | 3%最冷值 | 1D |
| 8 | 1%最冷值 | 1D |
| 9 | 最冷值 | 1D |

表1‑112定标系数结果信息文件内容[.json样例： （黄底 为必须项）]

|  |
| --- |
| {    "satId": "HY-2D",    "sensorId": "CMR",    "level": "L1B",  "status" : 0,  "algo\_name" : " H2D\_CMR\_Cold\_Calibration\_CAL",  "method\_name" : "VCR",#定标方法名  "algo\_version": " V01",  "message": "SUCCESS",  "organization": "ht",  "programmer": "宁莹",  "responsibler": "王士帅",  "mode\_type" : "DAILY",#将输入json中的内容填过来,包括：DAILY/WEEKLY/MONTH/YEARLY  "start\_time": "20211021T074109",  "end\_time": "20211021T074109",  "produce\_time":"20220307T174104",  "image\_band1\_trend\_path:"/home/eric/untitled2/data/out/\*.jpg",#趋势图，根据需要画。  "image\_band2\_trend\_path:"/home/eric/untitled2/data/out/\*.jpg",#趋势图，根据需要画。  "image\_band3\_trend\_path:"/home/eric/untitled2/data/out/\*.jpg",#趋势图，根据需要画。    "coefs": [      {        "band": ’18.7’,        "num": 1.0,        "TB\_min": 0.0,        "TB\_max": 1.0,        "TB\_std": 0.0,        "TB\_mean": 1.0,        "TB\_per5": 0.0,        "TB\_per3": 1.0,  "TB\_per1": 0.0,        "TB\_coldest": 1.0  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg"      },      {        "band": ’23.8’,        "num": 1.0,        "TB\_min": 0.0,        "TB\_max": 1.0,        "TB\_std": 0.0,        "TB\_mean": 1.0,        "TB\_per5": 0.0,        "TB\_per3": 1.0,  "TB\_per1": 0.0,        "TB\_coldest": 1.0,  "image\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg"      }  …    ]  } |

表 1‑113 工作流程设计表（可删减，stepNo需按从1递增的顺序）

|  |
| --- |
| {     "product" : " H2D\_CMR\_Cold\_Calibration\_CAL ",     "step" : [        {           "log" : "read config file success.",           "status" : "0",           "stepName" : "读取工作单",           "stepNo" : "1",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input file success.",           "status" : "0",           "stepName" : "读取配置文件",           "stepNo" : "2",           "timeStamp" : "20211021T074109"        },        {           "log" : "analyse input file.",           "status" : "0",           "stepName" : "解析工作单",           "stepNo" : "3",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input data file success.",           "status" : "0",           "stepName" : "读取卫星数据",           "stepNo" : "4",           "timeStamp" : "20211021T074109"        },        {           "log" : "",           "status" : "255",           "stepName" : "数据处理",           "stepNo" : "5",           "timeStamp" : ""        },        {           "log" : "",           "status" : "255",           "stepName" : "匹配数据输出",           "stepNo" : "6",           "timeStamp" : ""        }     ]  } |

### 1.3.4   HY-2D校正辐射计检验结果

#### 1.3.4.1 输入

表 1‑143定标结果计算算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "taskType": " **H2D\_CMR\_L2B\_VAL** ",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "mdss": [      {        "mds\_type": " **H2D\_CMR\_L2B-ECMWF\_GRIB** ",        "files": [          " **H2D\_CMR\_L2B\_ECMWF**\_xxxx.h5",          " **H2D\_CMR\_L2B\_ECMWF** \_xxxx.h5",          " **H2D\_CMR\_L2B\_ECMWF** \_xxxx.h5"        ]      },  {        "mds\_type": " **H2D\_CMR\_L2B-NCEP\_GRIB** ",        "files": [          " **H2D\_CMR\_L2B\_NCEP**\_xxxx.h5",          " **H2D\_CMR\_L2B\_NCEP** \_xxxx.h5",          " **H2D\_CMR\_L2B\_NCEP** \_xxxx.h5"        ]      }    ],    "resultFolder": "/home/eric/untitled2/data/out/"  "mode\_type" : "DAILY"#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY  } |

#### 1.3.4.2 输出

表1‑118检验结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 检验结果信息文件 | json |
| 2 | 日志文件 |  |
| 3 | 工作流文件 | .json |

表 1‑119定标系数相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 匹配点数量 | 1D |
| 2 | 平均偏差 | 1D |
| 3 | 绝对偏差 | 1D |
| 4 | 标准差 | 1D |
| 5 | 均方根误差 | 1D |
| 6 | 相关系数 | 1D |

表1‑120检验结果信息文件内容[.json样例： （黄底 为必须项）]

|  |
| --- |
| {    "satId": "HY-2D",    "sensorId": "CMR",    "level": "L2B",  "status" : 0,  "algo\_name": " H2D\_CMR\_L2B\_VAL ",  "method\_name" : "L2B\_VAL",#定标方法名  "algo\_version": " V01",  "message": "SUCCESS",  "organization": "ht",  "programmer": "李峻州",  "responsibler": "王士帅",  "mode\_type" : "DAILY",#将输入json中的内容填过来,包括：DAILY/WEEKLY/MONTH/YEARLY  "start\_time": "20211021T074109",  "end\_time": "20211021T074109",  "produce\_time":"20220307T174104",    "result\_SSW": [      {  "aux\_type":"ECMWF",        "resolution": "RES0",（统一空值）        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },      {  "aux\_type":"NCEP",        "resolution": "RES0",        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      }  …   ]  "result\_WV": [      {  "aux\_type":"ECMWF",        "resolution": "RES0",（统一空值）        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },      {  "aux\_type":"NCEP",        "resolution": "RES0",        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      }  …   ]  "result\_CL": [      {  "aux\_type":"ECMWF",        "resolution": "RES0",（统一空值）        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },      {  "aux\_type":"NCEP",        "resolution": "RES0",        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      }  …   ]    } |

表 1‑121 工作流程设计表（可删减，stepNo需按从1递增的顺序）

|  |
| --- |
| {     "product" : " H2D\_CMR\_L2B\_VAL ",     "step" : [        {           "log" : "read config file success.",           "status" : "0",           "stepName" : "读取工作单",           "stepNo" : "1",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input file success.",           "status" : "0",           "stepName" : "读取配置文件",           "stepNo" : "2",           "timeStamp" : "20211021T074109"        },        {           "log" : "analyse input file.",           "status" : "0",           "stepName" : "解析工作单",           "stepNo" : "3",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input data file success.",           "status" : "0",           "stepName" : "读取卫星数据",           "stepNo" : "4",           "timeStamp" : "20211021T074109"        },        {           "log" : "",           "status" : "255",           "stepName" : "数据处理",           "stepNo" : "5",           "timeStamp" : ""        },        {           "log" : "",           "status" : "255",           "stepName" : "匹配数据输出",           "stepNo" : "6",           "timeStamp" : ""        }     ]  } |

## 1.4    HY-2D卫星微波高度计

### 1.4.1  HY-2D高度计定标匹配算法

#### 1.4.1.1 输入

表 1‑1定标匹配算法输入

|  |
| --- |
| {    "resultLogFile": "/HY2B/SSH/data/output/HY2BVALIDATION\_ECMWFLOG.log",    "resultJsonFile": "/HY2B/SSH/data/output/HY2BVALIDATION\_ECMWFJSON.json",    "matchType": " **H2D\_ALT\_L2GDR-JASON3-IGDR** ",  "resultFlowFile": "/HY2B/SSH/data/output/1111.json",    "auxFile": [      "/HY2B/SSH/data/ **JASON3-IGDR**\*\*\*.h5",    "/HY2B/SSH/data/ **JASON3-IGDR**\*\*\*.h5","/HY2B/SSH/data/ **JASON3-IGDR**\*\*\*.h5",    ],    "resultFolder": "/HY2B/SSH/data/output",    "primaryFile": "/HY2B/SSH/data/hy2balt/H2D\_OPER\_GDR\_2PC\_0016\_0119\_20190601T024639\_20190601T033854.nc"  } |

表 1‑2 输入json说明

|  |  |
| --- | --- |
| 输入Json文件内容 | 说明 |
| Json文件 | 这个json文件为调度系统生成，作为算法的输入，指定了所需海洋卫星数据及辅助数据的路径，以及成果输出的路径等内容。 |
| resultLogFile | 日志信息文件，根据给定的路径和名称，自己创建，并填写日志信息 |
| resultJsonFile | 生成结果信息文件，即word中对应的结果信息文件表，自己创建，并填写内容 |
| matchType | 唯一标识，代表当前海洋卫星数据与哪种辅助数据进行匹配，word中对应的matchType组合列表 |
| resultFlowFile | 工作流文件，不需自己创建，打开修改内容 |
| auxFile | 待使用的辅助数据列表，调度系统会根据海洋卫星数据进行粗匹配，得到所有符合的辅助数据，文件绝对路径。 |
| resultFolder | 匹配数据集以及其他生成文件的输出路径 |
| primaryFile | 待匹配的海洋卫星数据 |

表1‑3 海动卫星高度计定标matchType组合列表

|  |  |  |
| --- | --- | --- |
| matchType组合 | 说明 | 有无auxFile |
| **H2D\_ALT\_L2GDR-JASON3-IGDR** | **HY2D和JASON3-IGDR产品** | **有** |

#### 1.4.1.2 输出

表1‑3海动卫星微波辐射计检验成果列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 匹配数据集 | .txt |
| 2 | 结果信息文件 | json |
| 3 | 日志文件 | .log |
| 4 | 工作流文件 | .json |

表 1‑4匹配数据集内容列表

|  |  |  |
| --- | --- | --- |
| 匹配数据集内容序号 | 匹配数据集内容名称 | 维度 |
| 1 | 待定标后向散射系数值 | 1D |
| 2 | 参考后向散射系数值 | 1D |
| 3 | 纬度 | 1D |
| 4 | 经度 | 1D |
| 5 | 待定标SSH值 | 1D |
| 6 | 参考SSH值 | 1D |

表1‑5结果信息文件 [结果信息 .json样例： （黄底 为必须项）]

|  |
| --- |
| {  "satId": "HY-2D",    "sensorId": "ALT",  "status" : 0，     "task\_type" : "H2D\_ALT\_L2GDR-JASON3-IGDR",     "algo\_name" : " H2D\_ALT\_L2GDR-JASON3-IGDR\_MDS",     "algo\_version" : " V01",     "message" : "SUCCESS",     "organization" : "ht",     "programmer" : "毕郁盼",     "responsibler" : "鲍青柳",     "result" : [        {           "filePath":  "/work/data/out/H2D\_ALT\_L2SSH\_20200105T001102\_20200106T000415\_031\_0363\_01.h5",           "meta" : {           "aux":"/work/data/out/DanganWharf/SSH”;  "/work/data/out/WailingdingWharf /SSH”;  "/work/data/out/ZhiwanWharf/SSH”  "Time\_range(min)" :30,  "Space\_range(km)" :25,           "endTime" : "20200210T235300",           "extent" : "POLYGON ((-179.993576049805 -66.6427536010742 0,-179.993576049805 74.0139312744141 0,179.491775512695 74.0139312744141 0,179.491775512695 -66.6427536010742 0,-179.993576049805 -66.6427536010742 0))",              "main":  "/work/data/H2B\_OPER\_ALT\_L2SSH\_20210910T220723\_20210910T235346\_01466\_dps\_250\_22\_owv.nc",              "productionTime" : "20200222T064036",              "size" : 56761,              "startTime" : "20200110T235346"           },           "typeid" : " H2D\_ALT\_L2GDR-JASON3-IGDR "        }     ]  } |

表 1‑6 工作流文件（可删减，stepNo需按从1递增的顺序）选取保留的步骤，每完成一步，对应status置为0

|  |
| --- |
| {     "product": " H2D\_ALT\_L2GDR-JASON3-IGDR ",     "step": [        {           "log": "read config file success.",           "status": "0",           "stepName" : "读取工作单",           "stepNo": "1",           "timeStamp": "20211021T074109"        },        {           "log": "read input file success.",           "status": "0",           "stepName" : "读取配置文件",           "stepNo": "2",           "timeStamp": "20211021T074109"        },        {           "log": "analyse input file.",           "status": "0",           "stepName" : "解析工作单",           "stepNo": "3",           "timeStamp": "20211021T074109"        },        {           "log": "read input data file success.",           "status": "0",           "stepName": "读取卫星数据",           "stepNo": "4",           "timeStamp": "20211021T074109"        },        {           "log": "",           "status": "255",           "stepName": "数据处理",           "stepNo": "5",           "timeStamp": ""        },        {           "log": "",           "status": "255",           "stepName": "匹配数据输出",           "stepNo": "6",           "timeStamp": ""        }     ]  } |

### 1.4.2  HY-2D高度计检验匹配算法

#### 1.4.2.1 输入

表 1‑7模式数据匹配算法输入

|  |
| --- |
| {    "resultLogFile": " /data/out/XINGXINGJIAOCHA.log",    "resultJsonFile": "/data/out/4028fa817be26547017be26daf320054.json",    "matchType": " **H2D\_ALT\_L2GDR-ECMWF\_GRIB**",    "resultFlowFile": "/data/out/1111.json",    "auxFile": [      "/home/eric/untitled2/data/N1D09100000091000001",      "/home/eric/untitled2/data/N1D09100000091030001",      "/home/eric/untitled2/data/N1D09100000091006001",      "/home/eric/untitled2/data/N1D09100000091009001",      "/home/eric/untitled2/data/N1D09101200091012001",      "/home/eric/untitled2/data/N1D09101200091015001",      "/home/eric/untitled2/data/N1D09101200091018001",      "/home/eric/untitled2/data/N1D09101200091021001",      "/home/eric/untitled2/data/N1D09110000091100001"    ],    "resultFolder": "/home/eric/untitled2/data/out/",  "primaryFile":"/work/data/H2D\_OPER\_GDR\_2PC\_0006\_0089\_20190111T003929\_20190111T013117.nc"  } |

表1‑4 海动卫星高度计检验matchType组合列表

|  |  |  |
| --- | --- | --- |
| matchType组合 | 说明 | 有无auxFile |
| **H2D\_ALT\_L2GDR-ECMWF\_GRIB** | **HY-2D高度计与ECMWF** | **有** |
| **H2D\_ALT\_L2GDR-NCEP\_GRIB** | **HY-2D高度计与NECP** | **有** |
| **H2D\_ALT\_L2GDR-TAO** | **HY-2D高度计与TAO** | **有** |
| **H2D\_ALT\_L2GDR-NDBC\_ATM\_TXT** | **HY-2D高度计与NDBC** | **有** |
| **H2D\_ALT\_L2GDR-SEN3A\_SRAL** | **HY-2D高度计与SEN3A-SRAL** | **有** |
| **H2D\_ALT\_L2GDR-SEN3B\_SRAL** | **HY-2D高度计与SEN3B-SRAL** | **有** |
| **H2D\_ALT\_L2GDR-JASON3-IGDR** | **HY-2D高度计与Jason3-IGDR** | **有** |
| **H2D\_ALT\_L2GDR-H2B\_ALT\_L2GDR** | **HY-2D高度计与H2B** | **有** |
| **H2D\_ALT\_L2GDR-H2C\_ALT\_L2GDR** | **HY-2D高度计与H2C** | **有** |

#### 1.4.2.2 输出

表1‑5海动卫星微波高度计检验成果列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 匹配数据集 | .nc |
| 2 | 结果信息文件 | .json |
| 3 | 日志文件 | .log |
| 4 | 工作流文件 | .json |

表 1‑6匹配数据集内容列表

|  |  |  |
| --- | --- | --- |
| 匹配数据集内容序号 | 匹配数据集内容名称 | 维度 |
| 1 | 被检验参数风速、有效波高、干大气校正量、湿大气校正量、电离层校正量、海况偏差、海面高度的值。 | 1D |
| 2 | 检验参数风速、有效波高、干大气校正量、湿大气校正量、电离层校正量、海况偏差、海面高度的值 | 1D |
| 3 | 被检验参数的纬度 | 1D |
| 4 | 被检验参数的经度 | 1D |
| 5 | 检验参数的纬度 | 1D |
| 6 | 检验参数的经度 | 1D |

表 1‑7结果信息文件 [结果信息 .json样例： （ 黄底 为必须项 ）]

|  |
| --- |
| {    "satId": "HY-2D",    "sensorId": "ALT",    "level": "L2B",  "status" : 0,  "task\_type" : " H2D\_ALT\_L2GDR-ECMWF\_GRIB ",    "algo\_name": " H2D\_ALT\_L2GDR-ECMWF\_GRIB\_MDS ",    "algo\_version": " V01",    "message": "SUCCESS",    "organization": "ht",    "programmer": "李峻州",    "responsibler": "鲍青柳",     "result" : [        {           "filePath": /work/data/out/H2D\_OPER\_GDR\_2PC\_0006\_0089\_20190111T003929\_20190111T013117.h5 "",           "meta" : {              "aux":  "/work/data/out/JASON-3;/work/data/out/Sentinel3A; /work/data/Saral; ",  "Time\_range" :30,              "endTime" : "20190111T013117",              "extent" : "POLYGON ((-179.993576049805 -66.6427536010742 0,-179.993576049805 74.0139312744141 0,179.491775512695 74.0139312744141 0,179.491775512695 -66.6427536010742 0,-179.993576049805 -66.6427536010742 0))",              "main": "/home/eric/untitled2/data/H2E\_OPER\_SMR\_L2B\_OR\_20210910T220723\_20210910T235346\_01466\_dps\_250\_22\_SST.h5",              "parameter" : "UV",              "productionTime" : "20190111T004036",              "size" : 233,              "startTime" : "201901110T003929"           },           "typeid" : " H2D\_ALT\_L2GDR-ECMWF\_GRIB "        }，    {           "filePath": /work/data/out/H2D\_OPER\_GDR\_2PC\_0006\_0089\_20190111T003929\_20190111T013117.h5 "",           "meta" : {              "aux":  "/work/data/out/JASON-3;/work/data/out/Sentinel3A; /work/data/Saral; ",  "Time\_range" :30,              "endTime" : "20190111T013117",              "extent" : "POLYGON ((-179.993576049805 -66.6427536010742 0,-179.993576049805 74.0139312744141 0,179.491775512695 74.0139312744141 0,179.491775512695 -66.6427536010742 0,-179.993576049805 -66.6427536010742 0))",              "main": "/home/eric/untitled2/data/H2E\_OPER\_SMR\_L2B\_OR\_20210910T220723\_20210910T235346\_01466\_dps\_250\_22\_SST.h5",              "parameter" : "UV",              "productionTime" : "20190111T004036",              "size" : 233,              "startTime" : "201901110T003929"           },           "typeid" : " H2D\_ALT\_L2GDR-ECMWF\_GRIB "        }       ]  } |

表 1‑12 工作流文件（可删减，stepNo需按从1递增的顺序）

|  |
| --- |
| {     "product" : " H2D\_ALT\_L2GDR-ECMWF\_GRIB ",     "step" : [        {           "log" : "read config file success.",           "status" : "0",           "stepName" : "读取工作单",           "stepNo" : "1",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input file success.",           "status" : "0",           "stepName" : "读取配置文件",           "stepNo" : "2",           "timeStamp" : "20211021T074109"        },        {           "log" : "analyse input file.",           "status" : "0",           "stepName" : "解析工作单",           "stepNo" : "3",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input data file success.",           "status" : "0",           "stepName" : "读取卫星数据",           "stepNo" : "4",           "timeStamp" : "20211021T074109"        },        {           "log" : "",           "status" : "255",           "stepName" : "数据处理",           "stepNo" : "5",           "timeStamp" : ""        },        {           "log" : "",           "status" : "255",           "stepName" : "匹配数据输出",           "stepNo" : "6",           "timeStamp" : ""        }     ]  } |

### 1.4.3  HY-2D高度计定标结果

#### 1.4.3.1   后向散射系数星星交叉法

##### 1.4.3.1.1输入

表 1‑134定标结果计算算法输入

|  |
| --- |
| {    "resultLogFile": "/work /data/out/HY-2B/4028fa817be26547017be26daf320054.log","/work /data/out/others/4028fa817be26547017be26daf320054.log"    "resultJsonFile": "/work /data/out/4028fa817be26547017be26daf320054.json",    "taskType": " **H2D\_ALT\_SIGMA\_Calibration\_CAL",**    "resultFlowFile": "/work/data/out/1111.json",    "mdss": [      {        "mds\_type": **" H2D\_ALT\_L2IGDR\_SIGMA-JASON3-IGDR ",**        "files": ["HY-2B\_ALT\_L2SSH-JASON-3\_20200105T001102\_20200106T000415\_031\_0363\_01.nc",          "HY-2B\_ALT\_L2SSH-JASON-3\_20200106T001102\_20200107T000415\_031\_0363\_01.nc",          "HY-2B\_ALT\_L2SSH-JASON-3\_20200107T001102\_20200108T000415\_031\_0363\_01.nc"        ]      }  ],    "resultFolder": "/work/data/out/"  "mode\_type" : "DAILY"#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY  } |

##### 1.4.3.1.2输出

表1‑20定标结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 定标系数结果信息文件 | .json |
| 2 | 日志文件 | .log |
| 3 | 工作流文件 | .json |

表 1‑21定标系数相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 定标系数a | 1D |
| 2 | 定标系数b | 1D |
| 3 | 匹配点数量 | 1D |
| 4 | 定标前相关系数 | 1D |
| 5 | 定标后相关系数 | 1D |
| 6 | 定标前标准差 | 1D |
| 7 | 定标前均方根误差 | 1D |
| 8 | 定标后标准差 | 1D |
| 9 | 定标后均方根误差 | 1D |

表1‑22定标系数结果信息文件内容 [.json样例：（黄底 为必须项）]

|  |
| --- |
| *// (适用于GMI（星星交叉法）或者NCEP（海洋目标法）)*  {    "satId": "HY-2D",    "sensorId": "ALT",   "level": "IGDR",  "status" : 0,  "algo\_name" : " H2D\_ALT\_SIGMA\_Calibration\_CAL",  "method\_name" : "CCS",#定标方法名，  "algo\_version": " V01",  "message": "SUCCESS",  "organization": "ht",  "programmer": "毕郁盼",  "responsibler": "鲍青柳",  "mode\_type" : "DAILY",#将输入json中的内容填过来,包括：DAILY/WEEKLY/MONTH/YEARLY  "start\_time": "20211021T074109",  "end\_time": "20211021T074109",  "produce\_time":"20220307T174104",  "image\_trend\_path":/home/eric/untitled2/data/out/\*.jpg",#趋势图，根据需要画。    "coefs": [      {        "slope\_a": 1.0,        "offset\_b": 0.0,        "num": 1.0,#匹配个数     "coef": 0.0, #相关系数        "aft\_std": 1.0,        "aft\_rms": 1.0,#标准差        "aft\_bias": 1.0,#偏差/定标系数 "percent01": 40,# 纬度范围剔除的百分比  "percent02": 40,# 时间范围剔除的百分比  "percent03": 40,# 海面风速范围剔除的百分比  "percent04": 40,# 后向散射系数范围剔除的百分比  "percent05": 40,# 总有效百分比  "image\_bef\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_aft\_distribution\_path:"/home/eric/untitled2/data/out/\*.jpg"      },    ]  } |

表 1‑23 工作流程设计表（可删减，stepNo需按从1递增的顺序）

|  |
| --- |
| {     "product" : " H2D\_ALT\_Inter\_Calibration\_CAL ",     "step" : [      {          "log" : "read config file success.",           "status" : "0",           "stepName" : "读取工作单",           "stepNo" : "1",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input file success.",           "status" : "0",           "stepName" : "读取配置文件",           "stepNo" : "2",           "timeStamp" : "20211021T074109"        },        {           "log" : "analyse input file.",           "status" : "0",           "stepName" : "解析工作单",           "stepNo" : "3",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input data file success.",           "status" : "0",           "stepName" : "读取卫星数据",           "stepNo" : "4",           "timeStamp" : "20211021T074109"        },        {           "log" : "",           "status" : "255",           "stepName" : "数据处理",           "stepNo" : "5",           "timeStamp" : ""        },        {           "log" : "",           "status" : "255",           "stepName" : "匹配数据输出",           "stepNo" : "6",           "timeStamp" : ""        }     ]  } |

#### 1.4.3.2   SSH星星交叉法

##### 1.4.3.2.1输入

表 1‑134定标结果计算算法输入

|  |
| --- |
| {    "resultLogFile": "/work /data/out/HY-2B/4028fa817be26547017be26daf320054.log","/work /data/out/others/4028fa817be26547017be26daf320054.log"    "resultJsonFile": "/work /data/out/4028fa817be26547017be26daf320054.json",    "taskType": " **H2D\_ALT\_SSH\_Calibration\_CAL",**    "resultFlowFile": "/work/data/out/1111.json",    "mdss": [      {        "mds\_type": " **H2D\_ALT\_L2IGDR\_SSH-JASON3-IGDR** ",        "files": ["HY-2B\_ALT\_L2SSH-JASON-3\_20200105T001102\_20200106T000415\_031\_0363\_01.nc",          "HY-2B\_ALT\_L2SSH-JASON-3\_20200106T001102\_20200107T000415\_031\_0363\_01.nc",          "HY-2B\_ALT\_L2SSH-JASON-3\_20200107T001102\_20200108T000415\_031\_0363\_01.nc"        ]      }  ],    "resultFolder": "/work/data/out/"  "mode\_type" : "DAILY"#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY  } |

##### 1.4.3.2.2输出

表1‑20定标结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 定标系数结果信息文件 | .json |
| 2 | 日志文件 | .log |
| 3 | 工作流文件 | .json |

表 1‑21定标系数相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 定标系数a | 1D |
| 2 | 定标系数b | 1D |
| 3 | 匹配点数量 | 1D |
| 4 | 定标前相关系数 | 1D |
| 5 | 定标后相关系数 | 1D |
| 6 | 定标前标准差 | 1D |
| 7 | 定标前均方根误差 | 1D |
| 8 | 定标后标准差 | 1D |
| 9 | 定标后均方根误差 | 1D |

表1‑22定标系数结果信息文件内容 [.json样例：（黄底 为必须项）]

|  |
| --- |
| *// (适用于GMI（星星交叉法）或者NCEP（海洋目标法）)*  {    "satId": "HY-2D",    "sensorId": "ALT",   "level": "L2",  "status" : 0,#成功写0，失败写1；  "algo\_name" : " H2D\_ALT\_SSH\_Calibration\_CAL",  "method\_name" : "SSHCCS",#定标方法名  "algo\_version": " V01",  "message": "SUCCESS",  "organization": "ht",  "programmer": "毕郁盼",  "responsibler": "鲍青柳",  "mode\_type" : "DAILY",#将输入json中的内容填过来,包括：DAILY/WEEKLY/MONTH/YEARLY  "start\_time": "20211021T074109",  "end\_time": "20211021T074109",  "produce\_time":"20220307T174104",  "image\_trend\_path:"/home/eric/untitled2/data/out/\*.jpg",#趋势图，根据需要画。  "coefs": [      {         "slope\_a": 1.0,        "offset\_b": 0.0,        "num": 1.0,#匹配个数      "coef": 0.0, #相关系数     "aft\_std": 1.0,     "aft\_rms": 1.0,#标准差     "aft\_bias": 1.0,#偏差/定标系数  "percent01": 40,# 纬度范围剔除的百分比  "percent02": 40,# 时间范围剔除的百分比  "percent03": 40,# 海面风速范围剔除的百分比  "percent04": 40,# 后向散射系数范围剔除的百分比  "percent05": 40,# 总有效百分比  "image\_bef\_distribution\_path":"/home/eric/untitled2/data/out/\*.jpg",  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_aft\_distribution\_path:"/home/eric/untitled2/data/out/\*.jpg"    },    ]  } |

表 1‑23 工作流程设计表（可删减，stepNo需按从1递增的顺序）

|  |
| --- |
| {     "product" : " H2D\_ALT\_SSH\_Calibration\_CAL",     "step" : [      {          "log" : "read config file success.",           "status" : "0",           "stepName" : "读取工作单",           "stepNo" : "1",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input file success.",           "status" : "0",           "stepName" : "读取配置文件",           "stepNo" : "2",           "timeStamp" : "20211021T074109"        },        {           "log" : "analyse input file.",           "status" : "0",           "stepName" : "解析工作单",           "stepNo" : "3",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input data file success.",           "status" : "0",           "stepName" : "读取卫星数据",           "stepNo" : "4",           "timeStamp" : "20211021T074109"        },        {           "log" : "",           "status" : "255",           "stepName" : "数据处理",           "stepNo" : "5",           "timeStamp" : ""        },        {           "log" : "",           "status" : "255",           "stepName" : "匹配数据输出",           "stepNo" : "6",           "timeStamp" : ""        }     ]  } |

### 1.4.4  HY-2D高度计检验结果

#### 1.4.4.1 输入

表 1‑39模式数据匹配算法输入

|  |
| --- |
| {    "resultLogFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.log",    "resultJsonFile": "/home/eric/untitled2/data/out/4028fa817be26547017be26daf320054.json",    "taskType": "**H2D\_ALT\_L2B\_VAL**",    "resultFlowFile": "/home/eric/untitled2/data/out/1111.json",    "mdss": [      {        "mds\_type": "**H2D\_ALT\_L2GDR-ECMWF\_GRIB**",        "files": [          " **H2D\_ALT\_L2B\_ECMWF**\_xxxx.h5",          " **H2D\_ALT\_L2B\_ECMWF**\_xxxx.h5",          " **H2D\_ALT\_L2B\_ECMWF**\_xxxx.h5"        ]      },  {        "mds\_type": "**H2D\_ALT\_L2GDR-NCEP\_GRIB**",        "files": [          " **H2D\_ALT\_L2B\_NCEP**\_xxxx.h5",          " **H2D\_ALT\_L2B\_NCEP**\_xxxx.h5",          " **H2D\_ALT\_L2B\_NCEP**\_xxxx.h5"        ]      }    ]  "historyjson": ["HY-2B\_ALT\_L2SSH-JASON-3\_20200105T001102\_20200106T000415\_031\_0363\_01.nc",          "HY-2B\_ALT\_L2SSH-JASON-3\_20200106T001102\_20200107T000415\_031\_0363\_01.nc",          "HY-2B\_ALT\_L2SSH-JASON-3\_20200107T001102\_20200108T000415\_031\_0363\_01.nc"        ]    "resultFolder": "/home/eric/untitled2/data/out/"  "mode\_type" : "DAILY"#可包含DAILY/WEEKLY/MONTH/SEASONLY/YEARLY  } |

#### 1.4.4.2 输出

表1‑41检验结果输出列表

|  |  |  |
| --- | --- | --- |
| 成果序号 | 成果名称 | 格式 |
| 1 | 检验结果信息文件 | pkl |
| 2 | 工作流文件 | .json |

表 1‑42定标系数相关数据集内容列表

|  |  |  |
| --- | --- | --- |
| 序号 | 定标系数相关内容名称 | 维度 |
| 1 | 匹配点数量 | 1D |
| 2 | 平均偏差 | 1D |
| 3 | 绝对偏差 | 1D |
| 4 | 标准差 | 1D |
| 5 | 均方根误差 | 1D |
| 6 | 相关系数 | 1D |

表1‑43检验结果信息文件内容 [.json样例：（黄底 为必须项）]

|  |
| --- |
| {    "satId": "HY-2D",    "sensorId": "ALT",    "level": "L2B",  "status" : 0,#成功写0，失败写1；  "algo\_name": " H2D\_ALT\_L2B\_VAL",  "method\_name" : "L2B\_VAL",#检验方法名,报告里用  "algo\_version": " V01",  "message": "SUCCESS",  "organization": "ht",  "programmer": "李峻州",  "responsibler": "鲍青柳",  "mode\_type" : "DAILY",#将输入json中的内容填过来,包括：DAILY/WEEKLY/MONTH/YEARLY  "start\_time": "20211021T074109",  "end\_time": "20211021T074109",  "produce\_time":"20220307T174104",  #共包含7个result: result\_SSH/result\_SSW/ result\_SWH/ result\_WAC(湿大气)/ result\_DAC(干大气)/ result\_SSB/ result\_IOC    "result\_SSH": [  {  "aux\_type":"ECMWF",#表示HY-2B/HY-2C/ECMWF/JASON3等检验源标识  "mean\_bias": 1.0,  "abs\_bias": 0.0,  "num": 1.0,  "std": 0.0,  "rmse": 1.0,  "coeff": 0.0,  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },  {  "aux\_type":"NCEP",  "mean\_bias": 1.0,  "abs\_bias": 0.0,  "num": 1.0,  "std": 0.0,  "rmse": 1.0,  "coeff": 0.0,  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      }  …    ]  "result\_SSW": [  {  "aux\_type":"ECMWF",  "mean\_bias": 1.0,   "abs\_bias": 0.0,   "num": 1.0,   "std": 0.0,   "rmse": 1.0,   "coeff": 0.0,  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },  {        "aux\_type":"NCEP",        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      }  …    ]  "result\_SWH": [  {  "aux\_type":"ECMWF",        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      },  {        "aux\_type":"SENTINEL-3A",        "mean\_bias": 1.0,        "abs\_bias": 0.0,        "num": 1.0,        "std": 0.0,        "rmse": 1.0,        "coeff": 0.0,  "image\_histogram\_path:"/home/eric/untitled2/data/out/\*.jpg",  "image\_scatterplot\_path:"/home/eric/untitled2/data/out/\*.jpg"      }  …    ]      } |

表 1‑44 工作流程设计表（可删减，stepNo需按从1递增的顺序）

|  |
| --- |
| {     "product" : " H2D\_ALT\_L2B\_VAL ",     "step" : [        {           "log" : "read config file success.",           "status" : "0",           "stepName" : "读取工作单",           "stepNo" : "1",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input file success.",           "status" : "0",           "stepName" : "读取配置文件",           "stepNo" : "2",           "timeStamp" : "20211021T074109"        },        {           "log" : "analyse input file.",           "status" : "0",           "stepName" : "解析工作单",           "stepNo" : "3",           "timeStamp" : "20211021T074109"        },        {           "log" : "read input data file success.",           "status" : "0",           "stepName" : "读取卫星数据",           "stepNo" : "4",           "timeStamp" : "20211021T074109"        },        {           "log" : "",           "status" : "255",           "stepName" : "数据匹配",           "stepNo" : "5",           "timeStamp" : ""        },        {           "log" : "",           "status" : "255",           "stepName" : "模式检验结果输出",           "stepNo" : "6",           "timeStamp" : ""        }     ]  } |

# 附录

## 1米CSAR匹配数据集命名

H5文件命名：

卫星\_载荷\_级别\_辅助数据标识\_模式\_波位\_极化\_最小时间\_最大时间\_生成时间.h5

CS1\_CSAR\_L1A\_CR0\_ImagingMode\_WaveCode\_PolarMode\_20160919T105321\_20160919T105325\_20211119T93059.h5

天线方向图命名规则：

RS\_ImagingMode\_WaveCode\_Polar+min(sar\_incidence)\_ max(sar\_incidence)\_5.40\_EL\_DV00.dat

### 1米CSAR单个匹配数据集：

MDS\_卫星\_载荷\_级别\_辅助数据标识\_模式\_波位\_极化\_最小时间\_最大时间\_生成时间.h5

如：MDS\_CS1\_CSAR\_L1A\_CR0\_ImagingMode\_WaveCode\_PolarMode\_20160919T105321\_20160919T105325\_20211119T93059.h5

### 1米CSAR合并匹配数据集：

周期模式\_卫星\_载荷\_级别\_辅助数据标识\_模式\_波位\_极化\_最小时间\_最大时间\_生成时间.h5(注：最小时间和最大时间只到年月日，周期模式包括：Weekly/MONTH/Seasonly/Yearly)

## HY-2D匹配数据集命名

### HY-2D单个匹配数据集：

MDS\_卫星\_载荷\_级别\_辅助数据标识\_要素\_最小时间\_最大时间\_生成时间.h5

如：MDS\_H2D\_SCA\_L2B\_ECMWF\_SSW\_20160919T105321\_20160919T105325\_20211119T93059.h5

### HY-2D合并匹配数据集：

MDS\_周期模式\_卫星\_载荷\_级别\_辅助数据标识\_要素\_最小时间\_最大时间\_生成时间.h5(注：最小时间和最大时间只到年月日，周期模式包括：(WEEKLY/MONTH/SEASONLY/YEARLY)

MDS\_W\_H2D\_SCA\_L1B\_ECMWF\_SSW\_20160919\_20160925\_20211119T93059.h5

## 图片命名

图片文件使用png格式存储，根据不同图片形式分为以下几种：

### 对比散点密度图：

按照：PIC\_SCATTER\_卫星\_载荷\_产品级别\_参考数据（\_级别）\_要素（\_阶段）\_起止时间\_版本号.png

如：HY-2E卫星SMR的L2B级海温产品与iQuam海温产品在20210101T000000\_20210201T000000的对比验证散点密度图（检验）：

PIC\_SCATTER\_HY2E\_SMR\_L2B\_IQUAM\_SST\_20210101T000000\_20210201T000000\_0001.png

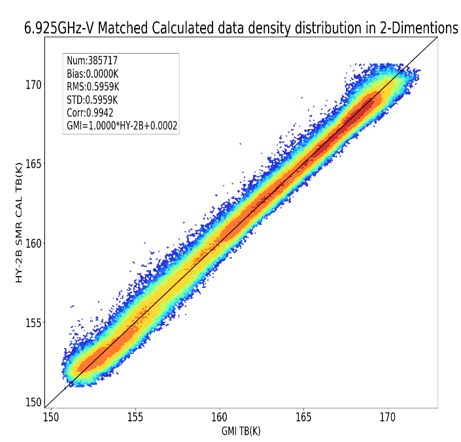
如：HY-2E卫星SMR的L2B级海温产品与GMI的L2级海温产品在20210101T000000\_20210201T000000的对比验证散点密度图（检验）：

PIC\_SCATTER\_HY2E\_SMR\_L2B\_GMI\_L2\_SST\_20210101T000000\_20210201T000000\_0001.png

如：HY-2E卫星SMR的L2A级亮温产品与GMI的L2级模型亮温在20210101T000000\_20210201T000000的对比验证散点密度图（BEF是定标前，AFT是定标后）：

PIC\_SCATTER\_HY2E\_SMR\_L2A\_GMI\_L2\_TB\_BEF\_20210101T000000\_20210201T000000\_0001.png

PIC\_SCATTER\_HY2E\_SMR\_L2A\_GMI\_L2\_TB\_AFT\_20210101T000000\_20210201T000000\_0001.png



注：点数过大时，建议使用plt.hist2d绘制（如下图）

### 误差概率直方图：

按照：PIC\_HIST\_卫星\_载荷\_产品级别\_参考数据（\_级别）\_要素（\_阶段）\_起止时间\_版本号.png

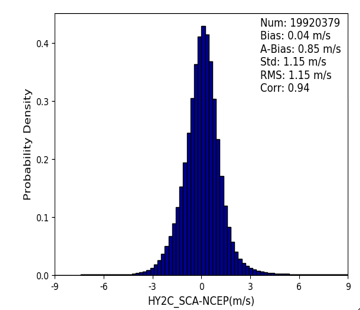
如：HY-2E卫星SMR的L2B级海温产品与iQuam海温产品在20210101T000000\_20210201T000000的误差直方图（检验）：

PIC\_HIST\_HY2E\_SMR\_L2B\_IQUAM\_SST\_20210101T000000\_20210201T000000\_0001.png

如：HY-2E卫星SMR的L2A级亮温产品与GMI的L2级模型亮温在20210101T000000\_20210201T000000的误差直方图（BEF是定标前，AFT是定标后）：

PIC\_HIST\_HY2E\_SMR\_L2A\_GMI\_L2\_TB\_BEF\_20210101T000000\_20210201T000000\_0001.png

PIC\_HIST\_HY2E\_SMR\_L2A\_GMI\_L2\_TB\_AFT\_20210101T000000\_20210201T000000\_0001.png



注：横轴是误差值，纵轴是对应的概率

### 分布图：

按照：PIC\_DIS\_卫星\_载荷\_产品级别\_参考数据（\_级别）\_要素\_起止时间\_版本号.png

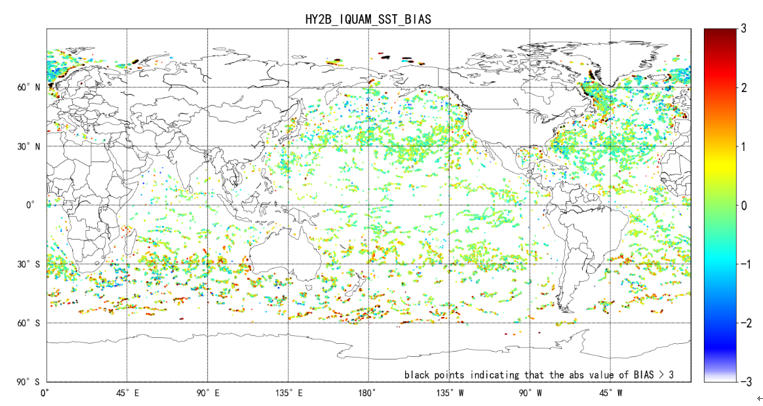
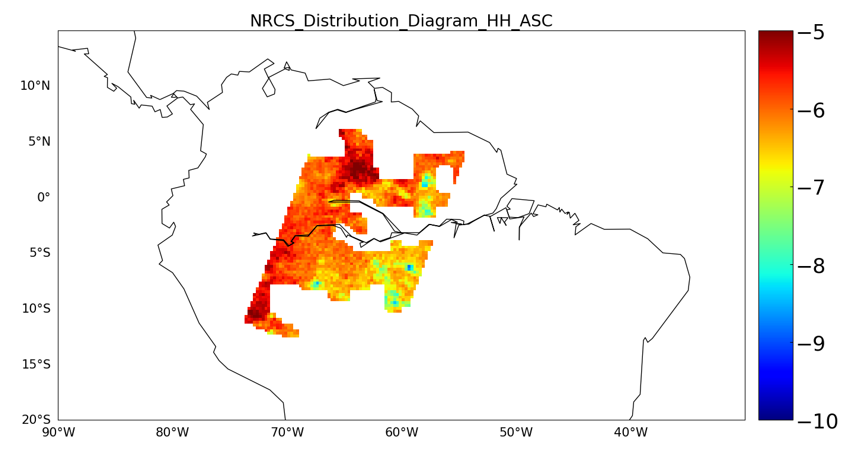
如：HY-2E卫星SMR的L2B级海温产品与iQuam海温产品在20210101T000000\_20210201T000000的匹配结果误差分布图（检验）：

PIC\_DIS\_HY2E\_SMR\_L2B\_IQUAM\_SST\_20210101T000000\_20210201T000000\_0001.png

如：HY-2E卫星SMR的L2A级亮温产品与GMI的L2级模型亮温在20210101T000000\_20210201T000000的匹配结果分布图（定标）：

PIC\_DIS\_HY2E\_SMR\_L2A\_GMI\_L2\_6H\_20210101T000000\_20210201T000000\_0001.png

PIC\_DIS\_HY2E\_SMR\_L2A\_GMI\_L2\_18V\_20210101T000000\_20210201T000000\_0001.png

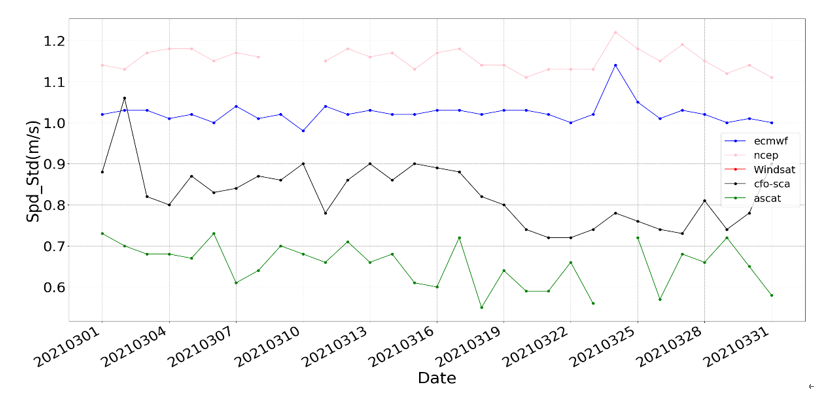
### 趋势图：

按照：PIC\_trend\_卫星\_载荷\_产品级别\_要素\_统计要素\_起止时间\_版本号.png

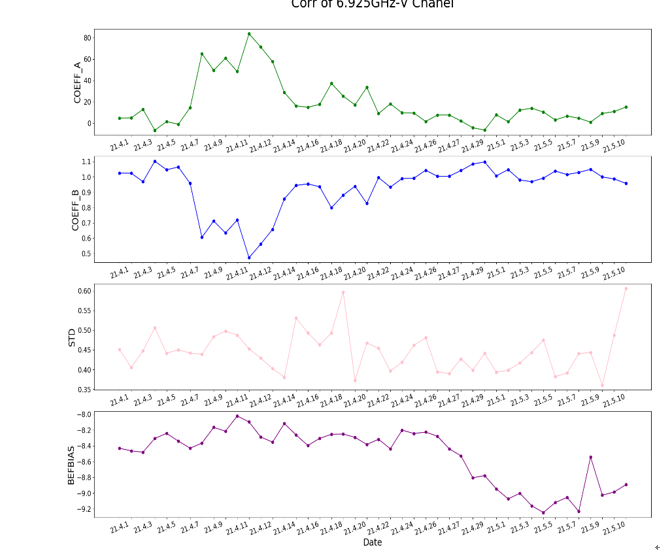
如：HY-2E卫星SMR的L2B级海温产品在20210101T000000\_20210201T000000与各参考数据源之间的平均偏差趋势图（**检验**）：

PIC\_trend\_HY2E\_SMR\_L2B\_IQUAM\_SST\_BIAS\_20210101T000000\_20210201T000000\_0001.png

检验相关趋势图：



定标相关趋势图：



## 匹配失败情况的输出json格式

以1米C-SAR图像检验匹配（角反射器几何检验）为例：

|  |
| --- |
| {  "satId": "CS1",  "sensorId": "CSAR",  "status" : 1, #失败：1，成功：0  "task\_type" : "MVS"  "algo\_name" : "CS1\_CSAR\_L2\_CR\_MDS",  "algo\_version" : "V01",  "message" : "SUCCESS",  "organization" : "ht",  "programmer" : "宁莹",  "responsibler" : "邢树果",  "result" : [  {  "filePath" :" ",#空  "meta" :  {  "aux" : "/root/Desktop/Ocean\_Target\_CalibrationConst/CalibrationConst-PolCalibration/4028fa817cea5968017d323df6e301c1\_cornerParams.xml",  "endTime" : "20160919T105325",  "extent" : "",#空  "main" : "/root/Desktop/Ocean\_Target\_CalibrationConst/CalibrationConst-PolCalibration/GF3\_MYN\_QPSI\_000584\_E107.9\_N39.7\_20160919\_L1A\_AHV\_L10003269459",  "parameter" : "",#空  "productionTime" : "20211119T9310",  "size" :0, #0  "startTime" : "20160919T105321"，  "ImagingMode": QPSI,  "WaveCode": 213,  "PolarMode": AHV  },  "typeid":"CS1\_CSAR\_L2-CR"  }  ]  } |